11296

Railway Age

WITH WHICH IS INCORPORATED THE RAILWAY REVIEW

FIRST HALF OF 1927—No. 19 NEW YORK—APRIL 9, 1927—CHICAGO SEVENTY-SECOND YEAR

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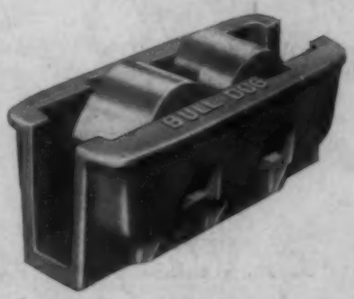

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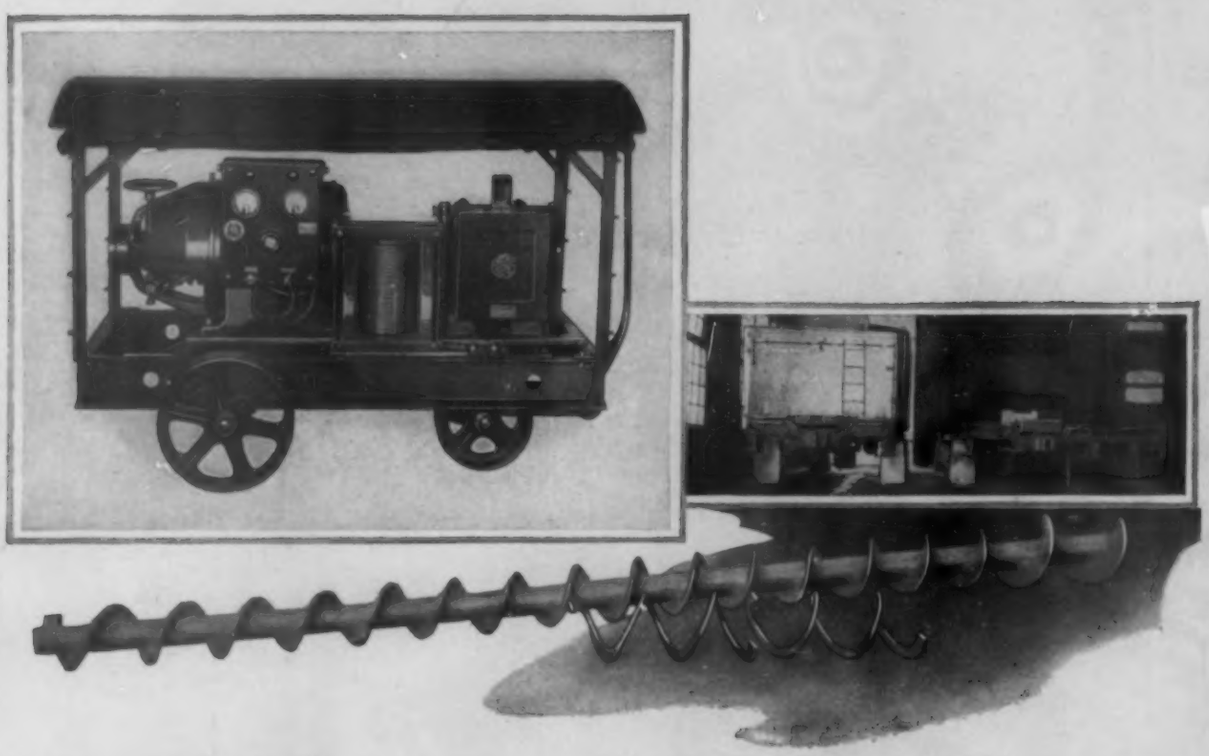

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Volume 82 Number 19

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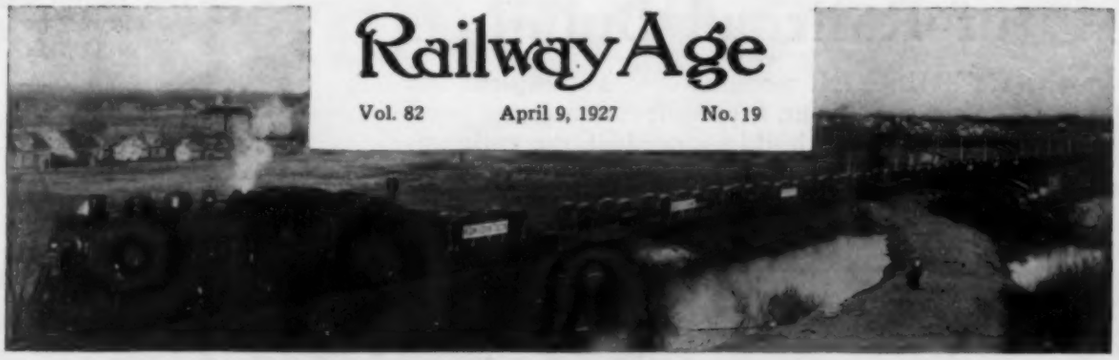
Railway Age

Vol. 82 April 9, 1927 No. 19



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Railway Age

Vol. 82, No. 19 April 9, 1927
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Passenger Car Orders

IN the light of the increasing efforts to improve passenger service and passenger equipment, it is interesting to note that orders for passenger cars for domestic use as reported in the *Railway Age* for the three months ended March 31, amounted to 772. Interest is heightened when, on comparing these three months of 1927 with the same preiod in 1926, it is noted there were 481 ordered; in 1925 there were 279 ordered, and 1924 559 were ordered. The orders for the first three months of this year are not exceeded unless we go back to 1923 when 972 cars were ordered. This year promises to be a good one for passenger car orders, but that would seem only natural in the light of knowledge that the year promises to be an outstanding one in achievements of passenger service.

Per Diem Savings

NOT so very many years ago it was the accepted theory that per diem did not matter, since the per diem received offset the per diem paid. This idea still persists in some cases. There are, of course, railroads where the per diem does balance and, in some instances, a considerable credit may accrue every day. But, for every railroad that is making money on per diem, another is losing money. A dollar a day is not a very large sum in itself, but where the number of foreign cars on the line daily exceeds the number of cars owned by 1,500 or 2,000, as it does on some railroads, the per diem debit means a net outgo of $1,500 or $2,000 per day, under the best of conditions. This bulks large in the annual report. Every operating officer should acquaint himself with the per diem conditions on his railroad and on his division and study to take advantage of all opportunities for saving.

Better Records of Service Tests

RAILROADS are constantly being importuned to undertake service tests of new devices, materials, modified forms of construction, etc. In most cases these are prosecuted with a sincere desire to promote an advancement in design and construction practices but in not a few cases such tests are authorized primarily with a view to placating the persistent and troublesome champion who will not take no for an answer. Obviously such tests are of little value because, having been initiated under unfavorable auspices, they receive little or no attention after the installation has been completed and more often than not are forgotten entirely. A case of this kind was recently brought to light wherein a railroad which was among the first to make tests of a certain type of construction failed to retain any permanent record of them, and now, after a lapse of several years, during which the construction has received widespread attention, no facts are available concerning these initial installations.

Train Control in the Back Shop

IT frequently happens that work is delayed while a locomotive is undergoing repairs in the back shop because of some unforeseen circumstance. The locomotive is scheduled for service on a certain date and the result of the delay is that the last of the work is rushed—in some instances it may be completed in the enginehouse. If the locomotive is equipped with automatic train control apparatus, it will be reapplied in haste under such circumstances. This is highly undesirable, for successful automatic train control operation requires a high standard of maintenance and depends upon having the equipment installed in first-class condition. When some of the installation work is carried over into the enginehouse it will probably be performed under adverse conditions and without adequate tools. So much is involved that every reasonable effort should be made to prevent such last-minute rush work.

Huge Losses of Passenger Business

THE complete passenger statistics of the Interstate Commerce Commission for 1926 show more strikingly than ever before the losses of passenger business that the railways have sustained and are still sustaining owing to the increasing use of the private automobile and the motor bus. Passenger business on the railways reached its maximum in 1920. The number of passengers carried by rail has declined since then from as little as 15 per cent in the Great Lakes region to as much as 68 per cent in the Southwestern region. The railways in the southwest in 1920 carried about 67,500,000 passengers, and in 1926 they carried only about 21,550,000, a decline of more than two-thirds. The decline in the number of passengers carried in the entire eastern district has been 22 per cent; in the southern district, 42 per cent, and in the western district, 47 per cent, or almost one-half. Of course, the losses have been mainly in short haul business and, therefore, the declines in the number of passengers carried one mile have been smaller. The decline in passengers carried one mile in eastern territory has been 15 per cent, in southern territory 21 per cent, and in western territory 38 per cent. In the entire country it has been 25 per cent. Computed on the basis of the average rates received in 1926, these losses of passenger business caused the following losses in earnings last year to the railways of the three large groups: Eastern, $91,400,000, Southern, $46,400,000; Western, $207,000,000, a total of about $345,000,000.

Meantime, competition and the attitude of the public and public authorities have prevented compensating reductions in train service, the reduction in the country as a whole being less than 10 per cent and even in the western district less than 4 per cent.

New Equipment and the Uniform

WITH not a few railroads of this country paying particular attention to their appearance, that is dressing themselves as carefully and attractively as possible so far as cars, locomotives, terminals, and right-of-way are concerned, it may be well to call attention, in relation to this program, to the matter of employees' uniforms, something about which the *Railway Age,* at other times, has had occasion to speak. The effect of a beautiful train, its cars colored and designed attractively inside and out, its locomotive polished, colored and named, would certainly be marred if its crew were not groomed to the highest possible degree of neatness and dignity. Although there may be those who believe that just as color and design has been added to equipment, so it should be added to the uniform, it seems that it is enough at this time to emphasize the necessity for keeping the uniform as clean, neat, and well-groomed generally as is possible. By doing so, the employee cannot help but be a fitting part of the decorative plan employed by the carriers in their effort to raise the railroad equipment and service to a higher degree of attractiveness.

Stand-By Service for Interlocking Maintenance

FOR years it has been the common practice to provide signal maintainers for all three tricks at the more important interlocking plants, in spite of the fact that the repair, adjustment, and inspection of switch machines, track connections, outside wiring, etc., can best be done only during daylight hours. Therefore, the whole of the third trick and part of the second-trick man's time must be devoted to inside work, which is a small proportion of the total maintenance. In many cases, it is recognized that the third-trick man has rather light duties ordinarily. In other words he is really employed for stand-by protection service to make quick repairs in case of a failure of equipment or an accident on the plant. In view of the fact that this stand-by service is provided to reduce delays to train movements, the charge should be to operation rather than maintenance. With heavier rail, better track connections and increased efficiency in operating methods, train accidents such as derailments in terminals are decreasing. One large road has come to the conclusion that the fact that there would always be a maintainer on hand to "shoot" trouble, led to slack maintenance methods and the maintenance at one large interlocking was placed on a strickly daylight basis, resulting in a general clean-up of defects and a decided reduction in the number of failures. In many instances one third-trick man, centrally located, can protect a number of plants against emergencies. It would seem that the signal departments should be capable of providing a sufficiently high standard of maintenance to permit that work to be confined to daylight hours. However, it is really up to operating officers to take the initial step because the surplus time now being spent is in reality stand-by protection for train service.

And Now Portugal!

ONE by one the European governments which operate railroads appear to be coming to the conclusion that direct government operation is a failure. In Germany, to make the railroads sufficiently remunerative to pay reparations, they were alienated from direct governmental operation and turned over to a quasi-private company. Much the same course was adopted in Austria and Belgium. Some degree of separation from the state, by placing a board of directors rather than a cabinet minister in charge and separating the railroad budget from the general budget, has been achieved in other countries. Now comes a report from Portugal to the effect that its government lines have been turned over to a private corporation—the "Companhia dos Caminhos de Ferro Portuguezes"—for operation. Government lines in other parts of the world seem to be succeeding directly in proportion as they have been able to copy the methods of private corporations. From all indications taps has sounded for government operation of railroads as the term is generally understood, i.e., operation by a cabinet minister but slightly guided by commercial considerations, as for example most of the European roads before the war and the United States roads in the heyday of William Gibbs McAdoo.

Bus and Truck Regulation Spreads

IT seems now to be a question of only a short time until all states will have laws on their statute books which will provide for the regulation of motor bus and truck common carriers. At the beginning of this year, intrastate carriers of this kind were subject to regulation in 39 of the 48 states. Recently the legislatures of two more states, Missouri and Texas, passed regulatory bills, and these bills await only the signatures of the governors to be made laws. The number of states without such laws is now small and the present sentiment in favor of regulation, to be found not only among the railways but also among the larger, more responsible bus and truck operators themselves, seems to assure the early passage of bus and truck regulatory laws in these states. Two major objectives still remain. One is the placing of the task of regulating the highway carriers in the proper hands. In some states, as in West Virginia, for example, the regulation of rail carriers is the duty of one commission and the regulation of highway carriers, that of another. Common sense dictates that the same body of state officers should regulate all kinds of carriers. The other major objective is that of the regulation by the federal government of interstate bus and truck carriers. This is expected eventually, perhaps in the next session of Congress, and the earlier it is accomplished the better, for the ultimate good of the railways and of motor transportation itself.

Is Unionism in the Doldrums?

ONE hears in many places reports that labor unionism in this country is losing ground—not because of any campaign against it but because of a lack of activity and enthusiasm within the organizations themselves. A writer in the New Republic, himself quite apparently a sympathizer with organized labor, speaks of the "diminishing attendance at union meetings, the decadence and spiritlessness of the movement." Is there any truth in this charge, and if so what is the underlying cause?

The New Republic writer believes that the primary cause is the "amazing development of employers' welfare work." In 1925 the entire American Federation of Labor is said to have spent but $2,800,000 in old age benefits, whereas the Pennsylvania Railroad alone is credited with an outlay of $4,000,000 for this purpose. Plainly if this and other instances cited are true, employers generally are showing a more progressive and humane interest in the workingman than the labor organizations themselves. A labor union properly guided is a potential source of good. When it ceases to function in a manner to bring credit on itself, however, it quickly declines in power and some other organization may rise up to take its place. There is an old truism to the effect that no institution can stand still: it either goes forward or declines. If the rumors and reports about unionism in America are true, therefore, what would seem to be needed is a little honest self-examination and a revamping of old policies into a program better fitted to modern human and industrial needs.

Working Against Each Other

WHO would say that there is sense, other than nonsense, in permitting a train porter to sweep waste paper from the rear end of his train on to the right-of-way as one would throw rubbish overboard in mid-ocean, and then expect a section gang to pick it up or to take pride in the appearance of its littered-up section. Strangely enough, this careless practice still prevails on a number of roads for presumably no reason, and yet at the same time agitation continues in the roadway department and thousands of dollars are spent annually to keep the right-of-way clean and in fact to beautify it in many instances. There are those who will say that the amount of waste swept from trains is trivial, and yet this is not borne out by the experience of a number of roads which have found it profitable in some instances to bale and sell the waste paper collected in this way. If this rubbish were distributed uniformly over the entire line, its appearance might not be so objectionable, but where a certain porter sweeps out his train daily at about the same place, untidiness of these sections cannot help but result unless the track forces utilize their time in picking up his rubbish continually. The fact that observation cars are not operated over a road should be no argument in favor of this practice from which nothing is to be gained. On the other hand, consideration should be given to the detrimental effect of this practice on the morale of the track man who is trying to keep his section in a neat condition.

I. C. C. Helped by Bankers

THE Interstate Commerce Commission is doubtless well satisfied with the progress of competitive bidding for equipment trust certificates. An interesting recent development was the Baltimore & Ohio's sale of $9,750,000 series E certificates, announcement of commission approval of which was made two weeks ago. The certificates were sold to a syndicate consisting of the Bankers Trust Company, Brown Brothers & Co., Kissell, Kinnicutt Company, Evans, Stillman & Co., and Harrison, Smith & Co. It appears that the railroad sent invitations for bids to 27 banking firms and received 10 bids representing 37 banks and bankers. The price paid by the highest bidders was 98.69 and the issue has been put on the market with an offering price of 99.29, which allows the bankers a margin of 0.60 points. This is the third issue of equipment trust certificates made by the Baltimore & Ohio during the past year and a quarter; the other two were sold in February and June, 1926, respectively. All three bear 4½ per cent interest and the issuing prices of the three issues compare as follows:

Series	Amount	Date of Issue	Price Paid by Bankers	Aver. Annual Cost to Railroad Per Cent	Offering Price to Public
C	$8,370,000	February 1, 1926....	97	4.99	98.66
D	7,475,000	June 1, 1926.....	97.78	4.815	99.28
E	9,750,000	April 1, 1927.....	98.69	4.685	99.29

The series C and D certificates were sold without competitive bidding. The margin allowed the bankers was 1½ points, while in the case of the series E issue the margin is less than one-half that amount. The road has also benefited because of the better bond market as reflected in the progressive improvement in the offering price to the public. The commission's argument was that competitive bidding would widen the market for these issues and permit the railroads to borrow their money at a lower rate, which contention seems thus far to have been borne out. The bankers maintain on the other hand that while competitive bidding may appear advantageous now with a favorable securities market, it may not prove so grood when the market is in a less satisfactory position. It has been generally believed that the bankers do not favor competitive bidding. The commission, however, will undoubtedly find a certain degree of satisfaction in the fact that 37 bankers bid for this single large issue. Apparently there is much more difference of opinion and considerably more competition among bankers than a great many people had been given to believe.

Maintenance and Horse Racing

NOW is the time when a large number of the entries in the race for the annual maintenance stakes are preparing to start on the roads in the northern portions of the country. Those who must maintain the tracks for fast and heavy traffic will surely not cavil at the term "race" in this connection, for with the amount of work that can be done only during the spring, summer and fall it often becomes a race indeed, with winter ready to drop the flag for the finish at some uncertain point on the course. In sporting parlance the race is a handicap, but the conditions differ materially from what they would be if race track authorities arranged them, for in horse racing the idea is to favor the weak and penalize the strong to make as even a contest as possible. In the maintenance race, on the contrary, the contestants may start at any time and those who begin the race on January 1 by carrying on constructive work will be found far in the lead over those who wait until several months later to take up the running. The early start avoids a heart-breaking speed later on, and while the monthly progress during the early part of the year may not measure up to that attained during the other months it is made up for later on by avoiding the mad rush to complete the season's program before frost and snow slow down the speed. Here again is another vital difference between horse racing and railroad maintenance, for while in the former speed is the

sole object, speed in railroad maintenance, to be effective, must be coupled with good work, and in the effort to secure speed good work is too often sacrificed.

Tonnage Bonuses in Freight Houses

THE old "piece work" idea has developed far beyond its original limitations. Efficiency engineers have evolved methods of payment for greater production in the industrial field but the application of this principle of payment to the railroad field has been limited. An interesting development along these lines is to be found in the freighthouses of the Chicago Junction, described elsewhere in this issue. Here a tonnage bonus was made effective with a "deadline" at 50 tons of freight handled per gang per day. When this figure was first set, the employees maintained that it was impossible to handle that much per day regularly, and cited the fact that they were only averaging 42 or 43 tons a day as proof of their arguments. But, after being given a minimum guarantee, they agreed to try it and in the three years since its installation they have become strong advocates of the system, for they are making more money than ever before and without working much harder. Constant supervision and direction are no longer necessary, since, under the bonus system, the men supervise and direct themselves. They are on the alert for new and more efficient freight handling methods and they do not tolerate those who do not work with maximum efficiency, since, if one member of the gang is not doing his job, it reflects at once upon the earnings of the rest of the gang. A faulty application of "piece work" principles may result disastrously for both the management and the employees, but a well thought out plan of this nature is productive of the highest efficiency, satisfaction and contentment.

Montreal Meeting of the Mechanical Division

THE fact that the convention of the Mechanical Division, American Railway Association, will be held without the exhibit of the Railway Supply Manufacturers' Association in a measure narrows the interest in the meeting this year. The exhibit in itself is of tremendous value not only to those who are official members of the division, but to a large number of mechanical department supervisors and other railroad officers. To the members, however, the fact that, for the first time in the history of the Mechanical Division and its predecessor associations, the convention will be held in Canada, supplies a new element of interest. But it is the program which justifies a full attendance, not only of the representative members, but of all those mechanical department officers who are interested in the routine work of the association or who have to do with the problems of locomotive or car design, of locomotive utilization, or of personnel relations.

Among the sixteen committees, whose reports may be considered as the routine work of the organization, two are new this year. These are the committees on Lubrication of Cars and Locomotives, and Automotive Rolling Stock. Lubrication as a railroad problem is as old as the railroads, and it is perhaps for this reason that it has received comparatively little organized attention. Recent developments in this field, however, suggest that there are still many opportunities for improvement and it is a subject which undoubtedly provides an opportunity for much profitable committee work. The rapid spread in the use of passenger cars driven by automotive power plants and the opportunities for the use of internal combustion locomotives makes this a subject which will be of growing interest and importance for many years.

The program of this year's meeting is especially notable for the range of subjects to be presented in addresses or individual papers which reach beyond the scope of the routine work of the Mechanical Division An examination of the program, which was published in the March 5 issue of the *Railway Age*, page 674, shows a breadth of scope and an array of talent which is sure to stimulate progress in motive power and rolling stock development. To confine the attendance at this meeting to committee members and official representatives will be to lose the full value of what promises to be the best Mechanical Division meeting of recent years.

Co-operation Cuts Costs

ONE of the advantages of the divisional form of organization is the concentration of responsibility for all operations and for the economy with which they are conducted on the local division superintendent and his staff. This concentration does much to promote a "give and take" attitude among those in charge of the various branches of work on the division and to further the adoption of those methods which, while perhaps detrimental to the showing of one department, are advantageous to the interests of the road as a whole.

Nowhere is this more evident than in rail-laying operations. The replacement of rails necessarily involves interference with train operation and the cost of this work depends largely on the extent of this interference. On some roads maintenance officers are required to so conduct this work as to avoid or at least hold within narrow limits, interference with train movements. This, of course, increases the cost of the work of the maintenance of way forces. This is particularly true with the increasing use of rails of 100-lb. to 130-lb. sections and of machines to place them in position.

Of late years arrangements have been devised on a number of roads for the maintenance of way department to be given the unrestricted use of one track on multiple track lines in order that it may carry on its work with the maximum speed and complete it as quickly as possible. While this results in interference with train movement, this interference can be reduced greatly by the wholehearted co-operation of transportation officers in so scheduling their freight trains as to pass the work when the track is in service, by closer dispatching, by the installation of special crossovers and operators near the gangs, etc. By measures of this character, traffic is kept moving, the work of the rail gangs is greatly expedited and the period of interference shortened. More important, a saving in maintenance expenditures is effected far outweighing the added expense incurred by the transportation department.

This plan has made its greatest progress on those roads where the division officers are responsible for maintenance as well as transportation expenses. It should be extended more widely, however, for the economies are just as real with other forms of organization. The merits of this plan are sufficient to warrant its serious consideration by maintenance and transportation officers on those roads which still lay rail in the summer, to the end that they get together now and formulate plans for the placing of this steel in the most economical manner

this season. This involves closer co-operation between transportation and maintenance of way officers than now prevails on many roads.

When Commission and Court Disagree

NO one interested in the welfare of the American railroads should under any condition fail to read and analyze carefully the Interstate Commerce Commission's brief in the St. Louis & O'Fallon case, abstracted on another page of this issue. The word brief is used advisedly, because seldom has a regulatory commission put forth a decision or opinion in which it has appeared more in the likeness of a litigant. The commission's argument is striking on several counts. First, it will be observed that apparently the commission has flatly refused to obey the law of the land with respect to public utility valuations, as frequently expressed in several recent decisions of the United States Supreme Court. Instead, it has expressed views which would appear to be in exact contradiction to what the court has repeatedly stated. Second, the brief will be found to contain some of the most important statements ever made by the commission relative to its valuation policies and methods of finding railroad values. Third, never before has the commission stated more succinctly its reasons for declining year after year to establish a level of rates which will yield the fair return to which the carriers are entitled. Surprising will it be to discover that the fault seems to be laid at the door of the carriers who, except with reference to the western rate advance case "have accepted our findings" and "shown little disposition to seek further increases." As the commission expresses it, "they have realized that to do so would be to risk conflict with inexorable economic conditions."

There are two points of view on the commission. The majority opinion, written by Commisisoner Meyer, takes a view which expressed in its essentials, would be to the effect that the present cost theory of valuation is economically unjustified. It is contended that to use present costs as the rate basis would result in higher rates than the public could pay, and that due to fluctuations in the value of the dollar, present cost valuations would result in instability of the rate base and the rate level. The minority opinion was written by Commissioner Hall and there joined with him in it Commissioners Aitchison, Woodlock and Taylor, each of whom also had supplementary dissenting opinions. This minority opinion does not exactly take issue with the majority view. It does something many times more important. It points out that the Supreme Court has explicitly stated adherence to the view that public utilities should be entitled to earn a fair return on their value as of the time of the making of the rates. As Commissioner Hall puts it: "The more recent decisions of the Supreme Court seem to require that as to previously constructed property devoted to public service, the enhanced-cost basis should be given an effectual weight. It follows that under the law of the land, in determining the value of the O'Fallon for any of the purposes contemplated by either section 19a or 15a, the valuation and recapture provisions of the act which we administer, we must accord weight in the legal sense to the greatly enhanced costs of material, labor and supplies during the periods of inquiry, here the recapture years, over those prevailing in the pricing period. . . . If the law needs change, let those who made it change it. Our duty is to apply the law as it stands."

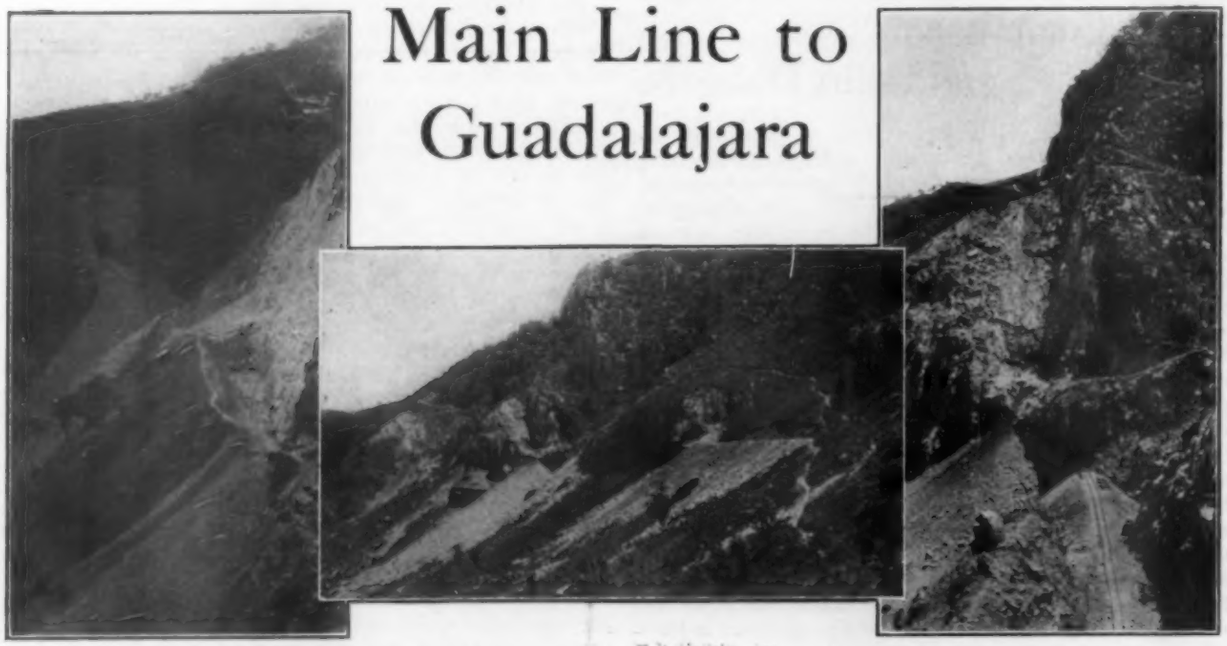
Commissioner Eastman did not dissent from the majority. He did, however, have a separate concurring opinion.

The important question involved in this case is as to whether the Interstate Commerce Commission or the Supreme Court is the superior authority in the matters involved. No railroad man can believe that the Supreme Court, after having insisted that proper weight be given to present values for water companies, light companies, gas companies or telephone companies, can find any reason to set up a different principle for the railroads. Nor do we believe that the commission will be sustained in its view that the carriers must pay wages or buy materials at post-war prices while they must be content to receive their income and earn their dividends at the lower pre-war levels. The argument that the present cost rate basis would be unstable seems indefensible, particularly when coming from a body that has consistently refused to allow the railways a fair return on even pre-war valuations. Certainly the carriers cannot always be required to take the short end. Nor do we see the necessity of worrying unduly about exorbitant rates on present cost valuations. Has the Supreme Court ever stated otherwise than that under any condition rates must be reasonable? The majority opinion states: "Whatever the rate base, we are enjoined and required to so adjust the 'fair return' that investment in railroad facilities will be encouraged and promoted and the companies maintained in good credit." Does not the commission realize that this, in the last analysis, is the reason for the Supreme Court's insistence on the giving of proper weight to present values? Surely the commission does not believe that a rate of return of 5.13 per cent as in 1926, on pre-war values, is proper encouragement. Does it expect indefinitely to refrain from permitting carriers a fair return on any basis whatever?

In the comment on the commission's decision in the O'Fallon case, one point seems to have been overlooked. Most of the comment has been derogatory to the federal regulatory body, but there has been omission of the fact that in each of the decisions in which the United States Supreme Court has developed the necessity of giving due weight to present or reproduction costs, the decision was in a case in which there was an appeal from some regulatory commission. While in the O'Fallon case the commission seems to have evaded responsibilities clearly stated in several Supreme Court decisions, it is also true that an issue has been made that can now be followed to its conclusion.

The commission in this decision has done exactly what everybody expected it would do. This is fortunate in that the way is now made clear to carry to the higher court this important matter of railroad valuations and the question of the weight to be given present values of railroad property. Even the Los Angeles & Salt Lake case dealt only with 1914 values and the present case is a better one than that also, because actual damages are involved—the amount being $226,000—whereas none was found to be involved in the Salt Lake case. The carriers, therefore, have only one thing to do and that is to let this case be carried to the Supreme Court. Certainly the investors in railway securities will insist that no stone be left unturned to secure a finding by the highest court in the land relative to the unfair policies followed by the commission with respect to valuation, rate making and its failure to permit the carriers to earn a fair rate of return. The railroads and the owners of their securities can at least thank the commission for the opportunity finally to secure a corrective of the commission's unduly repressive attitude.

Southern Pacific of Mexico Finishes Main Line to Guadalajara



Construction of the New Line in the Barranca de Santo Tomas

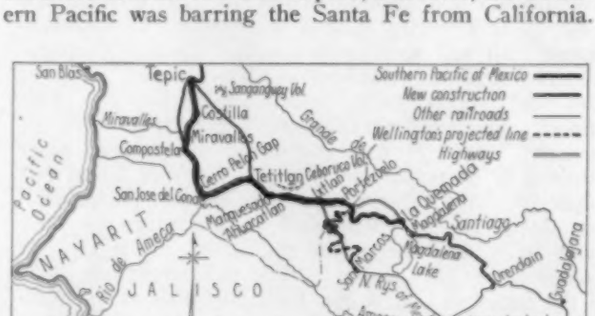
Closing of gap between Tepic and La Quemada completes construction program started in 1905

By Raymond Chambers
Professor of Economic History, University of Buffalo

ON April 1 the final link in the line of the Southern Pacific of Mexico was completed between Barrancas and La Quemada in the state of Jalisco, thus opening to through traffic the entire line from the United States border at Nogales, Ariz., to Guadalajara, a distance of 1,103 miles. To the Mexican nation, this route opens up the Mexican west coast to the rest of the country, putting an end to the isolation which has hitherto existed. Before the building of the railway, the only easy means of travel between the two sections has been either by rail through the United States from El Paso, Tex., to Nogales, or by rail through Guadalajara to Manzanillo and thence by steamer to Mazatlan. Both routes have been far too roundabout to link up the west coast effectively with the heart of the country. To the southwestern part of the United States the new line provides an additional and superior connection with Central Mexico, greatly reducing the time of travel from California or Arizona points to Guadalajara and Mexico City. To the Southern Pacific of Mexico the completion of the link means the possibility of securing eventually a return from an investment hitherto unprofitable.

Early History of the Road

The trunk line so nearly finished has been many years in the making and has grown out of inauspicious beginnings. It started with the Sonora railway, built in 1880-82 from Guaymas to Nogales by Boston capitalists interested in the Atchison, Topeka & Santa Fe. They built this line and the New Mexico and Arizona (from Nogales to Benson), expecting that the Santa Fe would use these as its outlet to the Pacific, via Deming and the Southern Pacific between Deming and Benson. This was the shortest route to a Pacific port; moreover, the Southern Pacific was barring the Santa Fe from California.

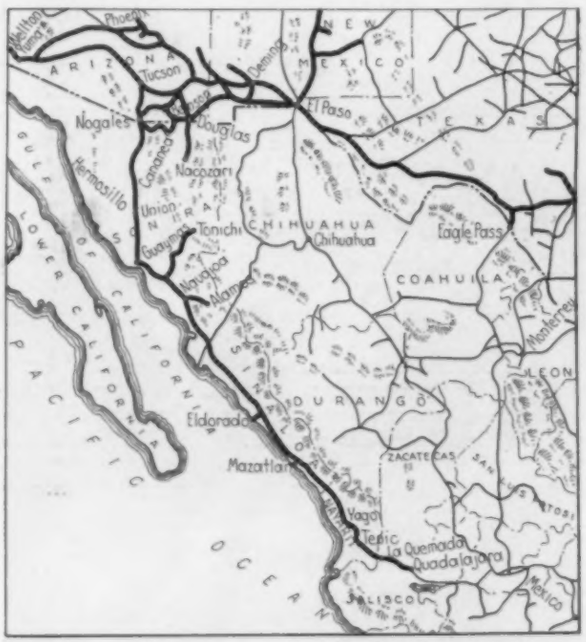


Location of Line Between Tepic and La Quemada

But before the Sonora railway was completed, the Santa Fe secured an entry into California and lost interest in the Sonora route. The Santa Fe bought the two small lines in order to keep them in existence, later transferring them to the Southern Pacific, first by lease in 1897, later by sale in 1912, in exchange for the Mojave division. Since the state of Sonora remained stagnant, the Sonora railway was almost without traffic, and barely

paid costs of operation and imperative outlays for maintenance. At the close of the nineteenth century, the development of the copper mines in northeastern Sonora led to the building of short railways from Douglas to Nacozari and from Naco to Cananea. The Southern Pacific Company took over the Cananea road in 1903, and in 1907-08 built a connecting line from Cananea to Nogales.

Then E. H. Harriman, inspired by the development of



The New Line Affords Easy Access to the West Coast from Central Mexico

the Arizona-Sonora copper country, proposed to make this Sonora railway the first link of a trunk system, which would extend down the West Coast to Mexico City, to Guatemala, and, according to rumor, to Panama itself. On receipt of enthusiastic reports from investigators sent out to visit the region between Guaymas and Guadalajara, he secured a concession in 1905 for a trunk line between these cities, together with cut-off lines from Cananea and Nacozari down the Yaqui river to the main line, and various other branches; another concession in 1909 extended the route to Mexico City.

Extension to Guadalajara Started

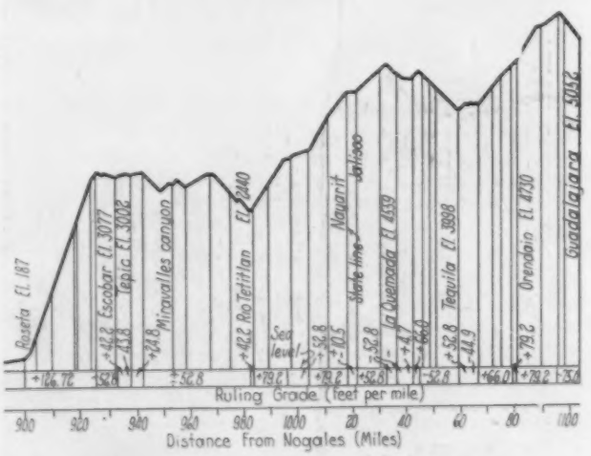
Construction began at Empalme, near Guaymas, in October, 1905, and reached Navajoa, 117 miles, with a branch to Alamos, 38 miles, by the middle of 1907. In 1907, construction also began north and south from Mazatlan, and from Orendain, a few miles west of Guadalajara, on the Mexican Central, now a part of the National Railways of Mexico. Early in 1909 the gap between Guaymas and Mazatlan was closed, and on May 1, 1910, the line was opened to Yago on the Santiago river, 146 miles south of Mazatlan. So far the line had been built through almost level and generally desert country, with easy conditions and no particular troubles except from Yaqui Indian raids in the Yaqui valley. Modern methods were used throughout in this building (except on the Guadalajara division, out of Orendain) and the work was done rapidly; in one case 39 miles were graded and the track laid within one month. The Orendain line was opened to La Quemada on November 3, 1910; meantime, the Tonichi branch had been built up the Yaqui river to Tonichi, 96 miles, in 1907-1910, work upon it ceasing on Mr. Harriman's death, as his successors lacked faith in its value.

Progress Interrupted by the Revolution

The revolution came in the autumn of 1910, but the company built on to Tepic, which was reached on February 5, 1912, and here further progress ceased. The gap of 103 miles between Tepic and La Quemada remained to be filled by a link line, and until this should be done the completed line would be unprofitable. After the close of the revolutions the railroad company wished to build this link line, but, because of the losses during the revolutions and the slight revenues received both during and after that time, it felt unable to build unless the government would pay the claims for loss and injury presented by the company. The government admitted most of the claims as valid, but pleaded inability to pay. Finally, on March 2, 1923, the government signed an agreement which had been proposed by H. B. Titcomb, president of the company; the money due was to be paid in installments, and was to be spent in completing and rehabilitating the line; by this course the company would ultimately benefit more than through any other use of the money, while the government would make a highly profitable investment.

The government gave notes for 13,600,000 pesos, payable 200,000 pesos a month; the remainder of the company's claim was to be determined later and notes given for the amount finally agreed upon. The monthly payments began in April 1923, and have been paid every month since then in strict compliance with the agreement.

On March 5, 1923, the signing of the agreement assuring the completion of the work was formally celebrated at La Quemada, President Obregon and his cabi-



Condensed Profile of Line in the Mountains

net being present, together with President Titcomb and other officers of the railway. The secretary of communications presented George F. Jackson, fiscal representative of the railway, a formal document containing the agreement as to the terms of building and President Obregon then turned a shovelful of earth with a silver trowel.

Construction actually began at La Quemada on March 6, the day after the formal ceremonies, and continued without interruption. The company itself built 3.85 miles from La Quemada west to the crest at the edge of

the barranca, and contracted the building of 9.35 miles from Tepic to Costilla to Twohy Brothers of Seattle. Both sections were all prairie work. The remaining construction was awarded to the Utah Construction Company, which sublet sections to several different contractors.

Difficulties of Construction

The building of the line has been a task of unusual difficulty and its completion in four years from the start of construction in 1923 is highly creditable, although this time exceeds considerably the original estimates, which failed to take proper account of the possible setbacks in the rainy seasons and of the difficulties to be met with in the larger tunnels. The money cost was estimated at $11,050,000 but will probably reach $14,000,000 U. S. currency; the money cost, however, gives no true estimate of the difficulties. Of the 103 miles of the link line, 33 miles traverse open country; but the rest of the way it winds around mountains and through

Piers for the First Crossing of the Miravalles Are of Concrete

gorges, rising from the 3,000 ft. Tepic plateau to the tableland of Jalisco, some 2,000 ft. higher, and crossing the great western Sierra. The mountains are exceedingly precipitous and dissected. At the time construction began, the country was thinly populated and little known even to the natives; almost no roads existed. Moreover the torrential rains of the summers have been a severe check to construction operations.

Because of the character of the topography and the vegetation, even the task of breaking trail, to say nothing of making the first surveys, was slow and wearisome. An inborn scent for railroad location was required to pick out the proper routes over some of the ridges and divides, and to tell whether the present line to La Quemada or the alternate route to San Marcos should be followed. The original locating surveys from Tepic

Heavy Grading Was Done by Hand Labor

to La Quemada required three years; the cost for all surveys on the mountain division has been $500,000 or more.

Favorable Location Was Obtained

The location of the present line differs considerably from the first surveys. Not only are the grades much easier than those estimated by Arthur Wellington when the Mexican Central surveyed from San Blas to Guadalajara, but they are also considerably lighter than those on the location first chosen by President Epes Randolph's engineers. Wellington's survey had a 3.2 per cent grade, was 9 miles longer, and was far more complicated, among other things calling for three loops and a high viaduct. Randolph's original survey required a 2.4 per cent line in the vicinity of Tetitlan. Instead, the line from the Tetitlan river east has been built with a maximum grade of 1.5 per cent and cost $30,000 less than the estimate for the other.

The improvements of the present survey over the one just preceding include a reduction in grade in the Miravalles Canyon from 1.5 per cent both ways (which would have necessitated a helper engine) to 1 per cent; a reduction between Tetitlan and Portezuelo from 1.6 per cent and 2.4 per cent to a maximum of 1.5 per cent; the elimination of six proposed tunnels in the barranca, with, however, the addition of three more in the Miravalles (required by the lower grade line there), leaving a net decrease of 2,608 ft. in tunnelling; and a reduction

of 1,291 ft. in estimated length of iron bridges, from 6,670 to 5,379 ft.

The relatively low grades on the new line are all the more unusual because the ascent to the plateau is not continuous, but instead, as on the Mexican Railway, is compressed within less than half the distance. Moreover, the actual ascent is considerably greater than the difference in elevation between the termini, since in the 50 miles from Tepic to Rio Tetitlan the road drops 560 ft. while at the other end it rises 335 ft. in the 3.5 miles from La Quemada to the summit; the ascent in the 50 miles from Rio Tetitlan to the summit is 2,455.5 ft. or about 49.4 ft. per mile.

The Camino Real Before the Coming of the Railroad

The Barranca de Santo Tomas

One of the most notable things in the actual location is the 1 per cent grade through the barranca, the most difficult part of the entire line. The railway follows the Ixtlan river to Portezuelo near its source; here the elevation approaches that of La Quemada, but between the two hamlets stretch miles of mountain ridges. To reach the interior plateau the road must cross the divide at Portezuelo into the canyon known as the Barranca de Santo Tomas carved by the Santo Tomas river on its way to join the Santiago, and must work along the side of the canyon to its head near La Quemada, beyond the mountain wall.

The barranca is not a barrier but an ally of the railway, as are the water-gaps and canyons of the Delaware, the Fraser and the Feather rivers. For 17 miles the railway follows the canyon, which at the western end is 2,000 ft. deep and 5 miles wide, becoming steadily narrower and shallower farther east. To keep its easy grade, the railway clings to the south wall some 1,500 ft. above the floor, tunneling and cutting to avoid rounding sharp mountain spurs, crossing the deep lateral ravines of mountain streams by means of huge fills, curving around ravines too broad and deep to cross,—one great ox-bow covers several miles. The task required 26 tunnels and many cuts and fills.

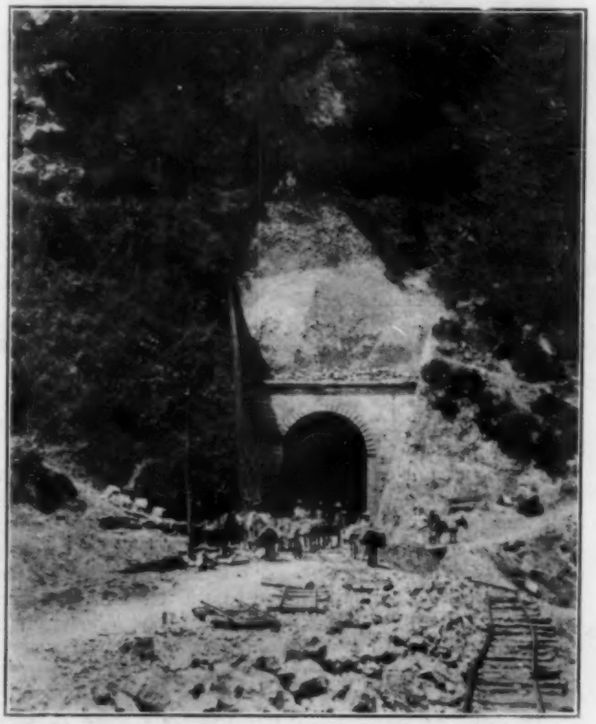
Construction Methods

Construction was begun at both ends, and soon engineering and grading parties were scattered all along the line, the number being shortened as the line approached completion. The shortness of the contract period necessitated work on all sections of the line simultaneously; this increased the actual costs of construction, but the extra cost will be repaid by the benefits of early completion.

Burro teams are constantly seen carrying materials to the camps; before roads could be made the burro was almost the only available agent of transport. Some 90 per cent of the supplies have been brought in by burro, the remaining 10 per cent by cart and wagon; occasionally wagons have been pulled by tractors. The contractors had to buy long trains of burros. When rented by the day the price was at first a peso and a half for the burro and driver; later that amount was charged for the man and an additional peso for the burro.

At first the only available highway was the old Camino Real from Guadalajara to Tepic, which paralleled the railway route as far west as Tetitlan, whence it cut in an air line to Tepic; this road was in a fearful condition. The contractors repaired it, and also made a second passable highway between Tepic and Tetitlan. But in the rainy season both were very poor, and many of the camps in the mountains could only be reached by narrow mule trails. Today these trails are numerous, broad, and well-maintained, with many short cuts; a year or two ago they were few, and very poor.

Work has been carried on mainly by hand and the methods used were described in an article by E. B. Sloan, chief engineer, which was published in the August 1, 1925, issue of the *Railway Age*. In the tunnels, until recently, nearly all the work was done by hand, save for drills of the smallest size; the difficulty of getting machinery into the barranca and the unfamiliarity of the workmen with machines compelled reliance upon primitive methods. Owing to the sudden changes in rock formation, methods and instruments had to be changed frequently in the tunnel work.



The South Portal of Tunnel No. 24 in the Barranca, Showing Masonry Construction

In the cuts, as in the tunnels, most of the work has been by hand, and where compressors have been used, they have been of the smallest size. Yet some machinery was used from the start, being brought into the camps in parts and set up there. In May, 1924, the contractors were employing two steam shovels, while in the Miravalles canyon a large air compressor driven by a 250 hp. Diesel engine was used, supplying air for work-

ing three tunnels at the same time. Alarmed at the slow rate of progress on the three long tunnels, Nos. 11, 17 and 21, only one-sixth to one-quarter complete, the Utah Construction Company, in the summer of 1925, arranged for compressors and electric light plants at each end of tunnel No. 11, and for operation in three shifts, with similar plans for tunnel No. 17.

Heavy Grading Was Required in the Barranca

Grading was not difficult except in the barranca, the Miravalles canyon and around Ceboruco volcano. The total amount of grading, aside from tunneling, was approximately 3,000,000 cu. yd. of which 1,000,000 cu. yd. was earth, 500,000 cu. yd. loose rock and 1,500,000 cu. yd. solid rock. The heaviest work was in the barranca where the handling of 550,000 cu. yd. of earth, 360,000 cu. yd. of loose rock and 1,200,000 cu. yd. of solid rock, or a total of 2,110,000 cu. yd. was necessary.

Walls and most substructure work in fills are of concrete; culverts are arched, with walls of rubble masonry or concrete. For small openings, corrugated iron pipe was used in country where loose rock does not exist.

In the barranca, many fills were of extraordinary size and in numerous cases retaining walls had to be built. The tunnels proved useful, because they were generally

Double Concrete Arches with Rubble Bench and Wing Walls—A Typical Form of Construction

close to the largest fills, and excavated material could be placed in them.

In the passage around the lower slopes of Ceboruco volcano, although the cuts and fills were not heavy, the task was immensely difficult because of lava fields. The mountainside is heaped with great blocks of lava, not only heavy, but with needle-like edges, and with sides as sharp as files. Being too large to shovel, the workmen had to pick them up with their hands. The laborers had to be provided with thick pigskin gloves, hundreds of pairs of which they wore out with extraordinary rapidity. This section showed a great variety of rock as did the barranca; on one large cut the ends were of soft tepetate, but in the center was a 10-ft. vein of thin porous lava, like pumice stone and very hard.

The rainy seasons bring much trouble from slides in cuts and fills, and cave-ins in the tunnels. Towards the end of the season everything begins "to run like pea-soup." Thus tunnel No. 4 in the Miravalles was blocked for five months by a slide over the portal in August, 1925, but cuts or fills which have lasted through one rainy season become grass-grown and reasonably permanent.

The only serious accidents on the link line were in connection with tunnelling and grading. The most serious accident was in a cut between tunnels Nos. 26 and 27, since called Deadman's Cut, where on November 23, 1923, 10 men were killed and 2 injured when a laborer threw a cigarette butt into a hole being loaded with black powder. In a nearby cut on June 4, 1925, an explosion killed 3 men, injured 6 and buried 5 others for 80 hours, after which they were rescued uninjured. In

The Line Was Built Through Rugged Country

tunnel No. 25, on March 31, 1925, an engineer and 3 peons were killed by a cave-in, while another was injured.

Many Tunnels Were Necessary

From Tepic to La Quemada there are 31 tunnels, 4 in the Miravalles, 1 near Mexpan, and 26 in the barranca. All other routes ever considered would have had heavier grades than the present road and would have economized little, if at all, in tunnels; Wellington's location would have had 26. The total tunnel length is about 5 miles (26,000 ft.), and the amount of rock removed, some 300,000 cu. yd. The two longest tunnels are No. 11 and 17 (2,878.3 and 2,875.7 ft., respectively), in the barranca.

All tunnels are of standard Southern Pacific section and construction, having a width of 16 ft. on tangents and 17 ft. on curves of over 2 deg., and a clearance height of 22 ft. from the top of the rail. The tunnels are generally well built, but two, started early, were left unlined because the rock was erroneously believed to be hard; decomposition of the rock caused a succession

Approach to Tunnel No. 27

of cave-ins which have made lining very difficult. The tunnels have been a far worse problem than was expected, owing to the complex character of the mountains. The original rock formation of the entire region was granite, but on top of that there came a lava flow, and the strata are confusedly intermingled. Every ten

to thirty feet in some of the tunnels the engineers have encountered entirely different strata, now hard, then soft, again swelling. Many tunnels have good rock at one end, bad at the other; several are bad all the way through. The two longest tunnels were the most difficult, having every variety of rock. Only two tunnels are in the underlying granite; none are entirely in solid rock and without need of lining.

Eighty per cent of the tunnels are concreted and the cost of lining was greater than that of driving the tunnels. The construction contract specifies concrete for lining if the materials are available, otherwise ashlar or rubble; rubble is both the cheapest and the weakest of the three materials while concrete is considered the best.

In lining the tunnels the practice has been to place a timber lining and then to concrete over the timbers. The best timbers were dressed material from the United States, but in many cases rough native poles were used temporarily, being much cheaper but these tended to twist and get out of line under the pressure from the rock.

The Bridges Include One High Viaduct

The new line has 32 bridges and viaducts with a total length of 5,379 ft. 3¼ in., between faces of back walls. Of these, 2,805 ft. are in the barranca and 1,508 in the Miravalles canyon. Sixteen of the bridges are from 20 to 80 ft. long, and the largest is the Salispuedes viaduct in the barranca, 860 ft. long and 235 ft. high, almost as high as the famous Pecos River viaduct. While the most difficult bridge work is in the barranca, the passage through the Miravalles canyon has necessitated expensive bridging. The road traverses this canyon for some seven or eight miles, clinging to the canyon walls and making two crossings.

Miravalles Canyon Bridges

Two of the bridges in the Miravalles canyon have riveted deck truss spans, one of 125 ft. and one of 150 ft. Two bridges have "I" beams on piers and all of the other bridges have deck plate girders on piers or towers. The Salispuedes viaduct is of tower and girder construction and consists of eight 40-ft. spans, one 60-ft. span and six 80-ft. spans. All of the abutments are of the "U" type with the exception of the bridge over the Arrogo Zapote, where they are of the buried type with reinforced tops. All of the bridges are of steel and conform to Southern Pacific standards. All of the bridge steel, 95 per cent of the timber and 50 per cent of the cement used came from the United States. Culverts are built with rail tops on masonry piers.

Progress of the Work

Two-thirds of the new line is laid with 75-lb. rails, including those portions through the Miravalles canyon and the barranca, and the remainder with 65-lb. rail. The entire line is ballasted. There are numerous sections of track where the roadbed becomes water-soaked during the rainy seasons and in such places several years of

The Line Through the Lava Fields near Ceboruco Volcano was Difficult to Build

settling will be required before the track will become stable. The line from Tepic to Costilla, 9.4 miles, which is in prairie country, was graded and the track was laid by June, 1923. By the end of 1924 track had been laid from La Quemada to the crest of the barranca, as well as for a short distance east of Costilla, while about 53 miles of grading had been completed on the remainder of the line. By early summer in 1925 nearly all the line had been graded, although numerous cuts, fills and tunnels were incomplete, including the two longest tunnels. Little tunnel work was begun until 1924, but by the middle of 1925 the Miravalles tunnels were complete, except for some minor work, as well as the six easterly tunnels in the barranca. In June, 1925, the track had advanced from Tepic easterly about 60 miles and by the end of the year was completed and opened to Portezuelo, 83 miles from Tepic.

The work was carried on under the direction of H. B. Titcomb, president, and E. B. Sloan, chief engineer of the railroad, the latter with headquarters at Empaline, Sonova.

São Paulo Railway Terminal at São Paulo

Panorama of a Missouri-Kansas-Texas Limited Train

Our Improving Passenger Service

More attractive dining car service—Many new special rates—Short-haul business still a problem

By James G. Lyne
Associate Editor, Railway Age

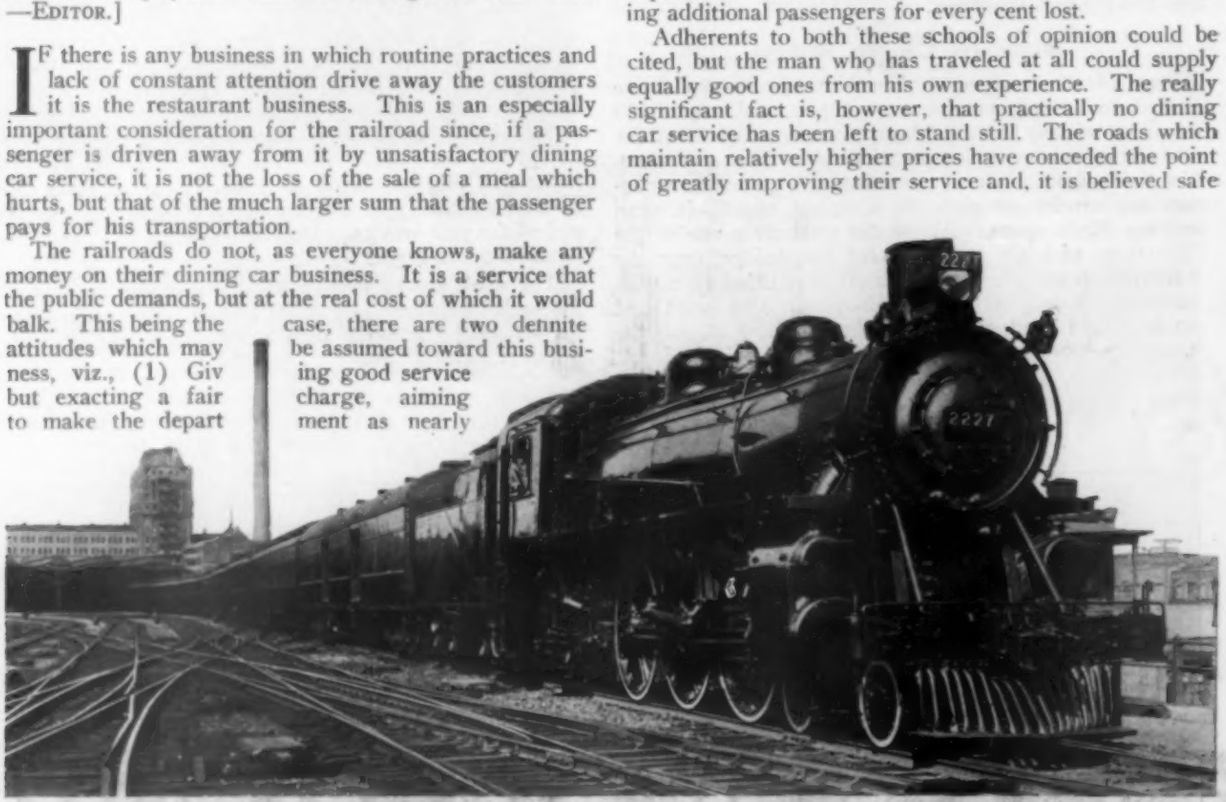
Part II

[*Part I of this article, which appeared in the* RAILWAY AGE *of April 2, page* 1055, *discussed increased speed in through service, new limited trains, improved car and locomotive equipment and new through Pullman lines.* —EDITOR.]

IF there is any business in which routine practices and lack of constant attention drive away the customers it is the restaurant business. This is an especially important consideration for the railroad since, if a passenger is driven away from it by unsatisfactory dining car service, it is not the loss of the sale of a meal which hurts, but that of the much larger sum that the passenger pays for his transportation.

The railroads do not, as everyone knows, make any money on their dining car business. It is a service that the public demands, but at the real cost of which it would balk. This being the case, there are two definite attitudes which may be assumed toward this business, viz., (1) Giving good service but exacting a fair charge, aiming to make the department as nearly self-supporting as may be; (2) Granting that the department is a money loser, and making the food better and the meals cheaper, not with the idea of making the department less of a loser, but with the motive of attracting additional passengers for every cent lost.

Adherents to both these schools of opinion could be cited, but the man who has traveled at all could supply equally good ones from his own experience. The really significant fact is, however, that practically no dining car service has been left to stand still. The roads which maintain relatively higher prices have conceded the point of greatly improving their service and, it is believed safe



The "Trans-Canada," C. P. R., Leaving Windsor Station, Montreal

to say, serve much more palatable meals than were obtainable on wheels a few years ago.

A change little short of spectacular has come in the case of some roads which have frankly used their dining cars as traffic builders. Here one can get a better meal than in the average city restaurant of the better class and it will cost less money. Whether the roads which have adopted this latter policy can justify it economically is a question which only they themselves can answer. Different roads are differently situated with respect to this service and a policy which is highly successful on one road might not be justified on another. It is a happy situation that the various carriers are maintaining their individuality here and are taking advantage of it to do some experimenting, the first step in all progress.

One of the great changes which has been made in this service is in the character of the equipment. Many improvements have been instituted in the design and decoration of the cars and in their equipment. Keeping of large varieties of food in stock and keeping it fresh is a much more complicated job than it is in a restaurant.

Improvements in Dining Cars

Recent cars are large, having more seating capacity and more kitchen equipment, involving new sanitary features. There has been a constant increase in the number of roads which offer table d'hote meals and club combinations at lower prices. Automatic temperature control and individual ventilators are a feature of some of the cars. Provision is also made for the use of live steam in sterilizing all table ware and in cleansing food compartments. At least one road, the Chicago & North Western, is experimenting with electric refrigeration. It is a general custom to examine dining car department employees to assure that they are free from disease.

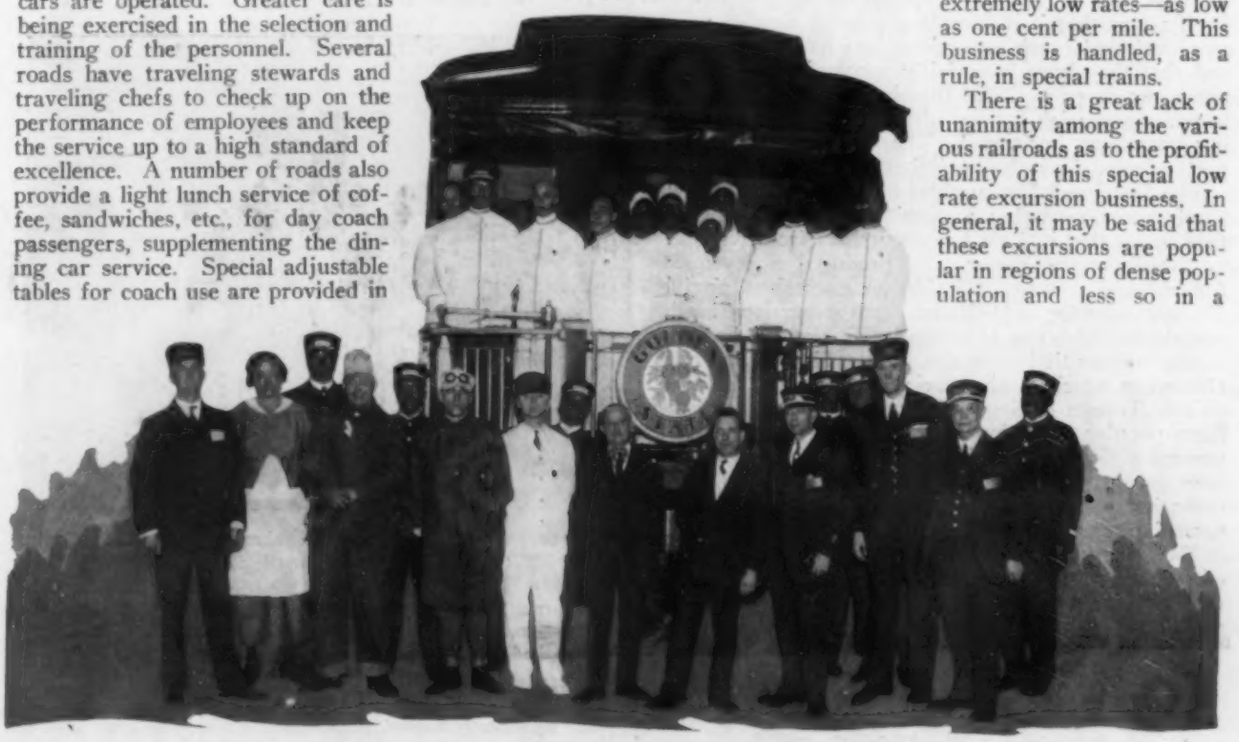
Dining car service has been extended to additional trains and on some runs where traffic demands it two dining cars are provided. Where the business does not justify a complete dining car, combination cafe-coach cars are operated. Greater care is being exercised in the selection and training of the personnel. Several roads have traveling stewards and traveling chefs to check up on the performance of employees and keep the service up to a high standard of excellence. A number of roads also provide a light lunch service of coffee, sandwiches, etc., for day coach passengers, supplementing the dining car service. Special adjustable tables for coach use are provided in a few cases. The Canadian roads provide cars where immigrants may prepare their own food.

Tourist and Excursion Rates

The railways have largely increased the number of special rates which they offer in order to induce additional travel. It is possible, during the "season," to visit practically all places of interest from the standpoint of scenery or recreation at rates considerably under those charged for regular travel. Excursionists to such points are carried in regular trains and may avail themselves of Pullman facilities. In addition, some roads operate low rate excursions for day coach passengers only at extremely low rates—as low as one cent per mile. This business is handled, as a rule, in special trains.

There is a great lack of unanimity among the various railroads as to the profitability of this special low rate excursion business. In general, it may be said that these excursions are popular in regions of dense population and less so in a

A Club Car on the Southern Pacific



The Crew of a De Luxe Train on the Rock Island—28 Persons

sparsely settled territory. The Pennsylvania, for instance, reports that it derives considerable revenue from these excursions. It operated more in 1926 than in any previous year and had a gratifying increase in revenue, the increase in the Central region alone being over 200 per cent as compared with five years ago. Over-Sunday excursions for long distances between large centers of population have also been operated successfully.

The Great Northern, on the other hand, finds that there is very little profit in this class of business. The

Ladies' Maid Examining Ladies' Shower on a Northern Pacific Train

Rutland reports that there is little profit when the business is to be handled on special trains. The Missouri Pacific says that it is operating a large number of low rate week-end coach excursions into its large terminals and that they have been fairly successful in increasing passenger revenue. The Illinois Central finds that the low rate excursion is "one of the best methods of creating passenger business." The Southern likewise reports success from the operation of these trains.

The Delaware, Lackawanna & Western, on the other hand, while reporting a considerable revenue in this field, states that in 1924 five excursions from New York to the Delaware Water Gap produced a revenue of $15,652 and that in 1925 thirteen excursions produced $15,490, whereas in 1926 ten such excursions brought in only $6,952. The Minneapolis, St. Paul & Sault Ste. Marie believes that excursion business is not very profitable when special train service is necessary. The Atchison, Topeka & Santa Fe has operated a number of these popular excursions, but does not favor them as a general policy, since it is believed that in the long run they do not produce any increased revenue and tend to make inroads of traffic which would otherwise move at normal rates.

The Missouri-Kansas-Texas reports a larger number of special excursions with general success. The Central of New Jersey finds these excursions, which it has operated for many years, a most profitable source of revenue. The Denver & Rio Grande Western has operated a number of one-cent-a-mile excursions, finding that the first two or three attracted a large number of people, but that succeeding ones developed only about 50 per cent as much business The Maine Central has operated some of these popular excursions and finds them profitable. The Chicago, Rock Island & Pacific finds that once the novelty of such excursions has worn off the patronage declines.

The examples mentioned above are selected at random merely to give an idea of the wide variations in the conditions which roads, even in the same territory, have to face regarding the popular coach excursions.

Excursions for Special Occasions Popular

Another form of excursion concerning which a number of railroads report enthusiastically is that operated in connection with some special event—a football game, an outing, or some celebration or festival. Rates for these special occasions are generally somewhat higher than the very low popular excursion rate offered generally only on Sundays.

Most roads provide a special rate for conventions—generally a fare and a half for the round trip—passengers riding under which are carried on regular trains and are permitted to avail themselves of Pullman accommodations.

Attractive Rates for Tourists

There are in addition the round trip excursion fares, mentioned above, to almost all points of interest to the tourist—the National parks, the Pacific coast, Canadian resorts, the Atlantic coast, Colorado, northern Wisconsin and Michigan, etc. Reports from a few railroads on this subject follow:

Chicago & North Western: This road and the Union Pacific maintain a department of tours, operating personally conducted tours to Yellowstone, Zion, and Rocky Mountain parks and California, arranging everything in advance—meals, berths, hotel accommodations, etc. This business is growing more popular each year. For the Lake Region of Northern Wisconsin and Michigan round trip rates 20 per cent below the regular rates are provided for those who spend a greater part of the summer there; 30-day return tickets are sold at a reduction of one-third and week-end tickets at slightly more than one fare for the round trip. This business is growing rapidly despite automobile competition. Modern sleeping, observation and dining cars are provided.

Atchison, Topeka & Santa Fe: A large tourist travel to

The Barber Shop Is Standard Equipment on De Luxe Trains —This One Is on the Santa Fe

California has been induced by the low summer excursion fares.

Chicago, Rock Island & Pacific: This company is making exhaustive tests of the effect of seasonal excursion rates through tourist territory and excursion rates for special gatherings. It reports that "there is no question as to the effect in creating travel by these means, as the bargain principle is quite as effective, intelligently applied, in passenger traffic as in other lines of business."

A Comprehensive Excursion Rate Schedule

The Southern Pacific has a very comprehensive plan of special excursion fares which cover the entire road. The schedule of these rates is as follows:

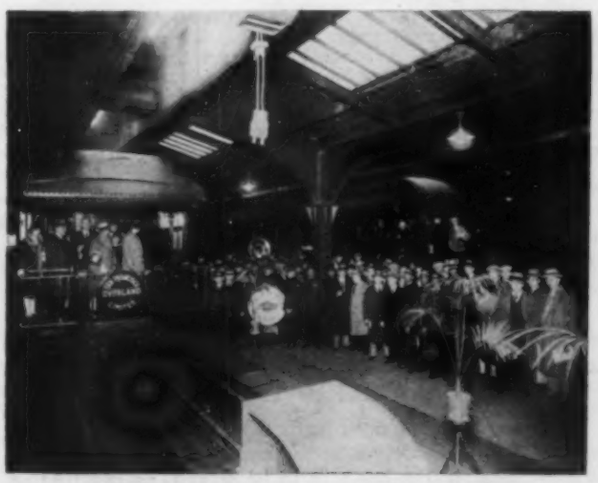
Round trip individual tickets	Reduction from double one-way fares
One month	10 per cent
Friday to Tuesday	25 per cent
Saturday to Monday	33⅓ per cent
Sunday	45 per cent
Round trip party tickets	
Parties of 15 to 99 inclu	33⅓ per cent
Parties of 100 or more	50 per cent

These have not been in effect for a sufficient period to enable the result from total volume of business to be determined, but advance reports are quite encouraging. In the territory between San Francisco and San Jose the road has placed its daily round-trip tickets on a basis of two cents a mile with the result that many more passengers are being handled and revenues slightly increased. This is a commuter zone.

Experienced travelers have noted a decided change for the better in the morale of railroad employees since the end of federal control. This improvement is not due alone to greater satisfaction of the employees with their jobs but also to well organized efforts to school employees in their tasks and to instruct them in their duties toward the public. Most roads have, as in the past, service inspectors who check up the performance of employees and instruct them in their duties. Several roads, as mentioned elsewhere, have recently provided additional training for dining car employees. Several roads have frequent staff meetings of passenger representatives on which occasion they are coached in dealing with the public. The general employee relations work of the railroads, together with the excellent employees' magazines which most of them publish, has undoubtedly aided largely in the improvement in this respect.

Improved Handling of Pullman Reservations

Great effort has been made to improve the handling of Pullman reservations. This is an important matter



Showing the New Train to the Public

The "Gold Coast Limited" on View at Northwestern Station, Chicago, Prior to Its Initial Trip in De Luxe Extra Fare Service to California.

for the railroad, since mistakes bring ill will. The failure simply because of inefficient methods to provide a passenger with space which is available loses revenue as well as good will.

The Pennsylvania has recently made extensive improvements in this operation at its New York terminal. The entire work is now under the jurisdiction of the passenger traffic manager and improved mechanical equipment has been installed in the station, which handles approximately 10,000 such transactions per day.

Direct telephone lines have speeded up the making of Pullman reservation in all important cities. For instance, on the Chicago & Eastern Illinois all car diagrams are held in the city ticket office, which has direct wires from the station and hotel ticket offices. On Sundays

Parlor-Observation Car on Mo. P.'s Scenic Limited

and holidays the diagrams are kept at the station so that purchase of advance space can be obtained then as well as other days. Special reservation clerks are assigned to this work.

In Chicago the Burlington handles all of its sleeping car diagrams in a special reservation room in the Union Station. This room is connected through by telephone with the various other ticket offices. It is believed that service is now more expeditious and errors much less frequent than formerly. The Chicago & North Western will shortly have in service a modern Pullman and parlor car reservation bureau.

The Lehigh Valley keeps a constant check on the utilization of Pullman accommodations from various points so that it may change the assignments in accordance with the demand. Unsold space is promptly wired ahead by Pullman conductors to make it available for sale at other points. On the Atchison, Topeka & Santa Fe a high passenger traffic officer pays close attention to this feature, not only following daily reports from important terminals but following also reports from conductors on the line indicating loading at various points. The Missouri-Kansas-Texas utilizes its long distance through wires for making space reservations at distant points with connecting lines. The Maine Central advises its agents to endeavor in every case to have patrons purchase Pullman space rather than merely reserve it, and great care is taken to avoid duplicate sales. Other roads report similar improvements.

Low Rate Suburban Traffic Growing

Railway suburban traffic has not been greatly affected by automobile competition and not many changes have been made in the service in recent years. There has, of course, been the usual amount of electrification of steam lines and the addition of improved equipment. Some roads deport a decrease in this suburban business even among monthly ticket passengers, who pay a very low rate, this decrease being due to automobile competition. However, this situation does not prevail in the more congested districts.

About the most serious problem which most of the roads handling this character of traffic have to meet is

the competition of buses which charge fares somewhat lower than the single trip railroad fare but materially higher than the monthly ticket rate. These buses thus tend to draw from the commuter trains the remunerative full-fare passenger and leave the railroad with the poorer paying business. The state of the commutation traffic on various roads can be shown by selecting at random among them:

Pennsylvania: Suburban traffic around New York, Philadelphia and Pittsburgh growing at a satisfactory rate; some

A "Conference Room" on a Limited Train

competition felt, but not as severe as competition for local business outside of suburban territory.

Chicago & Eastern Illinois: Suburban business in 1926 shows a slight decrease over the preceding year.

Chicago, Burlington & Quincy: Handles about 14,000 suburban passengers each way a day in Chicago territory, carried at a loss due to the extremely low rates; great improvement in character of service, including continuous program for replacing wooden equipment with all-steel cars with seating capacity of 100.

Chicago & North Western: This road handles about 22,000,000 suburban passengers per annum, running 213 trains per day; still fails to pay operating expenses after a recent increase of 20 per cent in rates; this non-remunerative traffic is increasing, while that paying a better rate tends to decline.

Missouri Pacific: Commutation business in St. Louis territory has tended to decrease by reason of automobile, bus and electric line competition.

Illinois Central: This company operates 481 electric trains in suburban service in the Chicago area each day. Prior to electrification, completed last year, this traffic showed a gradual increase. With the advent of electric service the number of passengers has mounted noticeably. The company estimates that with electric service it has enlarged the territory which it can serve more efficiently than other transportation agencies by 7,040 city blocks.

Delaware, Lackawanna & Western: Handles a large suburban business in the New York area; low rate rush hour business is increasing, while non-rush hour business is declining, due to bus competition.

Central Railroad of New Jersey. Large suburban traffic is continually increasing.

Erie: This company handles approximately 110,000 passengers in both directions at New York. The business is increasing steadily, although the full fare portion tends to decline, due to bus competition.

New York Central: Commutation business increasing, necessitating installation of "3-2" seats.

Southern Pacific: Commutation traffic around San Francisco increasing; stationary around Portland, Oregon, due to short distances, good roads and lack of congestion, which encourage automobile competition.

The railroads are practically unanimous in reporting severe declines in short-haul, local passenger traffic outside of commutation service. Most of the roads look upon this loss as inevitable, ascribing it mainly to competition by the privately owned automobile. They are not, they feel, able to give any kind of service which will draw all of these automobilists back to the rails. At the same time there are cases where some of the traffic has been retrieved and further losses stopped by improved service by the railroads. The two means most generally used to combat this situation are the rail motor car and the highway motor coach. The former is of particular value in curtailing losses experienced in lightly patronized passenger service, but makes no attempt, of course, to meet the automobile on its own ground, i. e., giving virtual door-to-door service. The bus, on the other hand, in many cases has been found definitely to attract traffic which would otherwise move by private automobile. Some roads, by using buses to take care of local passenger traffic, have been able to speed up their passenger trains, thereby making them more attractive over longer distances. In several places where railroads have established bus service they have found that train travel actually increased somewhat, in spite of the competition of the railroads' buses.

Rail Motor Cars and Buses

A glance at the experience of a few roads may be of interest.

Union Pacific: Short haul traffic diminished almost to vanishing point; railroad placing gas-electric motor cars in service.

Chicago Great Western: Making extensive use of rail motor cars, furthering discontinuance of local stops by through trains, permitting faster service; short haul travel continues to decrease.

Southern Pacific: Short haul traffic steadily decreasing; old type of rail motor cars not found entirely satisfactory; with development of newer type, company considering their use, as well as buses.

Chicago, Rock Island & Pacific: Making extensive use of rail motor cars.

Maine Central: Using one rail motor car and several buses.

Denver & Rio Grande Western: In six years local travel in Colorado has decreased 53 per cent; road operating buses in connection with the Colorado & Southern.

Central of Georgia: Great decline in local traffic; studying possibilities of rail motor cars and buses.

Erie: Using several rail motor cars.

Atlantic Coast Line: Short haul traffic completely disappeared. "It is improbable that the company will ever use the rail motor car; the only chance to meet bus competition is on the highways."

Central of New Jersey: Considering several propositions for use of rail motor cars and buses.

Missouri-Kansas-Texas: Lost practically all short haul traffic; is using two rail motor cars.

Atchison, Topeka & Santa Fe: Short haul traffic rapidly diminishing; studying possibilities of rail motor cars.

Minneapolis, St. Paul & Sault Ste. Marie: Using one rail motor car and finds it very satisfactory.

Southern: Has made exhaustive study of possibilities of rail motor cars and buses, but has reached no definite conclusion.

Lehigh Valley: Substitution of rail motor cars for steam service highly successful and is being extended.

Other roads which are using rail motor cars include the Pennsylvania, Northern Pacific, Chicago, Burlington & Quincy, Missouri Pacific, Illinois Central. Quite a number of railroads have installed highway motor coach service, details of which have been published from time to time in the Motor Transport Section of the *Railway Age*.

Short-Haul, Full-Rate Traffic the Problem

Viewing the passenger traffic situation on the railroads as a whole, one arrives at the conclusion that the problem of local traffic has still to be solved, as has that of meeting competition for full rate traffic in suburban territory. The commutation business itself tends to increase of its own accord.

The backbone of railway passenger revenues, however, is the through passenger business and to this business the railroads have given intelligent attention during the past few years. Moreover they have backed up their opinions regarding this business with real money. The result has been an improvement in service greater, probably, than that which any previous period of railroad history has witnessed.

One of the New Double-sheathed Box Cars Purchased by the Central Railroad of New Jersey

Steel Box and Automobile Cars for the C. R. R. of N. J.

Same construction and appliances have been incorporated in both types of cars as far as possible

EIGHT hundred steel box cars and 200 steel automobile cars were recently placed in service by the Central Railroad of New Jersey, in the construction of which a number of interesting features have been incorporated with the object of securing more economical maintenance. Both types of cars have been designed as much alike as possible consistent with the character of service for which they are intended. Four hundred of the box cars were built at the Middletown, Pa., plant of the Standard Steel Car Company and the remaining 400 box cars were built at the Johnstown, Pa., plant of the Bethlehem Steel Company. The automobile cars were built at the Berwick, Pa., plant of the American Car & Foundry Company. All of the cars were purchased primarily to handle increased business. The box cars were also purchased to replace a number of 30-ton box cars that had been dismantled. They are designed for use in general traffic but it is the intention of the management to use these cars for cement business as much as possible and for that reason considerable pains have been taken to insure a water proof roof and interior. The designers selected a flexible-roof which would conform readily to any weaving of the car body.

The design of the box and automobile cars has been carried out along the same lines as far as possible. A comparison of the general dimensions is shown in the table in the next column.

The underframes of both the box and automobile cars are of steel, the general arrangement being in accordance with the A.R.A. design. The center sills of the box cars consist of rolled-steel special A.R.A. sections which extend continuously between the end sill striking plates. The center sill cover plate is of copper-bearing steel. The body bolsters of the box cars are of pressed steel channel shapes with the flanges turned outward with top and bottom cover plates. The side sills of the box cars are 7 in. by 4 in., 18.8 lb. special A.R.A. channels of copper bearing steel. The end sills are constructed of 6-in. by 3½-in. by ⅜-in., 14.3-lb. angles, extending across the ends of the cars. The cross ties are also of pressed steel channel shape, ¼-in. thick and are made to A.R.A. standard.

The body framing of the box cars consists of 16 side posts of .11-in. pressed steel shapes, 3 in. deep, eight on

Comparative Dimensions of the Box and Automobile Cars

	Box Cars	Automobile Cars
Length over striking plates	42 ft. 3 in.	42 ft. 3 in.
Length inside	40 ft. 6 in.	40 ft. 6 in.
Width over side plates	9 ft. 5⅝ in.	9 ft. 8½ in.
Width over side sills	9 ft. 4¾ in.	9 ft. 7⅜ in.
Width inside	8 ft. 9⅛ in.	9 ft. 0 in.
Height inside	8 ft. 7¾ in.	10 ft. ¾ in.
Height, rail to top of floor	3 ft. 8¾ in.	3 ft. 8¾ in.
Height, rail to running board	13 ft. 3⅞ in.	14 ft. 8½ in.
Height, rail to top eaves (lateral run. board)	12 ft. 9⅜ in.	14 ft. 1 in.
Height rail to center plate bearing	2 ft. 2¾ in.	2 ft. 2¾ in.
Height door opening	7 ft. 11⅞ in.	9 ft. 5⅛ in.
Width total door opening, clear	6 ft. 0 in.	10 ft. 0 in.
Distance from center to center trucks	32 ft. 3 in.	32 ft. 3 in.
Capacity of car	100,000 lb.	100,000 lb.

each side of the car connected to the side plates by ¼-in. flat gussets with ½-in. rivets to both the plate and post. The door posts are 3-in., 6.7-lb. Z-bars. The corner posts are formed by flanges of the end sheets, reinforced inside with a 3½-in. by 3-in. by ¼-in. angle at the side sheet seams.

As shown in the illustrations, both the automobile and box cars are equipped with plain steel ends. The end

End View of the Automobile Car

construction consists of a steel plate in two sections. The end plate consists of a 5/16-in. pressed steel A.R.A., Z-section. The side sheets are all of copper bearing steel, riveted to the sills, plates and posts. All pressed steel part and plates on both the box and automobile cars ¼-in. thick or under are of copper bearing steel. The Hutchins Dry Lading roof is used on both the box and automobile cars. The sheets are of No. 16 gage steel and supported by pressed steel carlines. The ridge pole and purlines are made continuous without splices. Hutchins pressed steel running board saddles are provided.

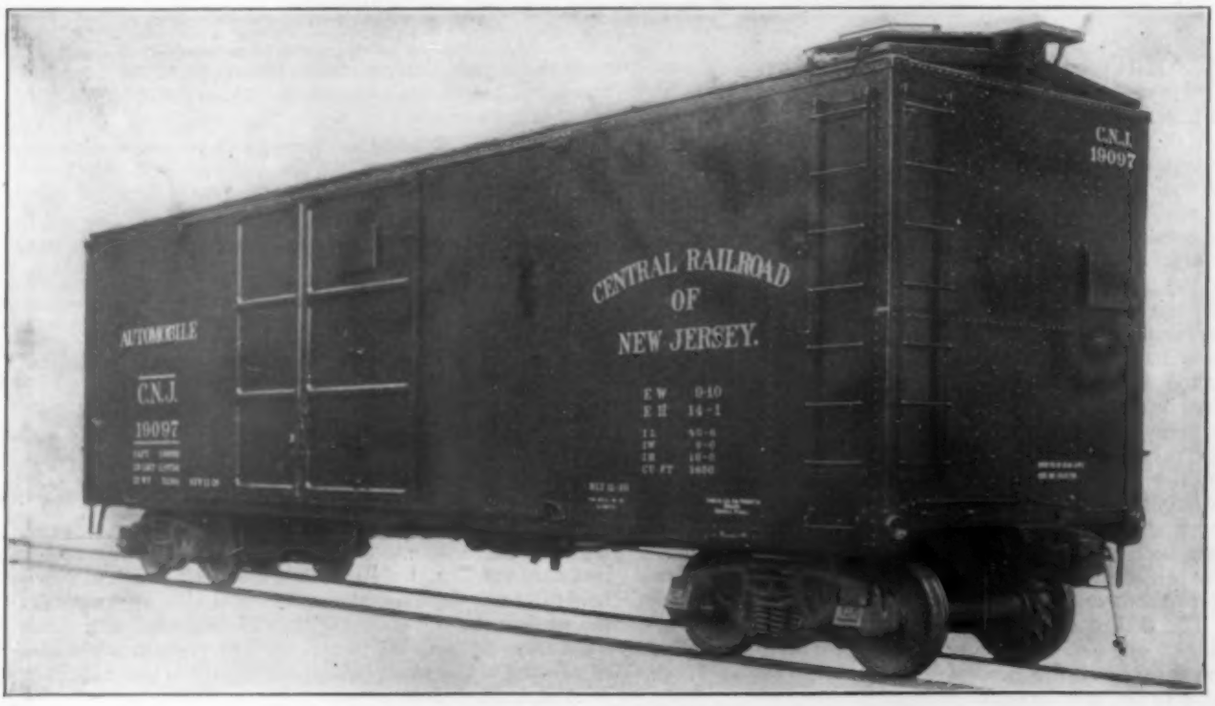
The flooring is of long leaf southern pine, tongued, grooved and dressed on both sides. The lining is of Oregon fir, tongued and grooved, the side lining extending in one piece from the door posts to the end of the car. The doors on 400 of the box cars are pressed steel pans in three sections, and the remaining 400 cars are equipped with pressed steel doors furnished by the Camel Company. All doors are of top hung design equipped with the Camel Company's fixtures, including the door starter.

Miner friction draft gear, class A-76-X is used with Farlow attachments. The couplers are of cast steel, A.R.A. type D, with a 6-in. by 8-in. shank.

These cars are equipped with modified A.R.A. class 2D trucks with 5½-in. by 10-in. journals, having a 5-ft. 6-in. wheel base. The truck side frames are of cast steel, the journal boxes being cast integral with the frame and are of the Dalman type built to A.R.A. requirements. The truck side frames and bolsters for half this order of cars were made by the Scullin Steel Company and the remainder by the American Steel Foundries. The Barber lateral motion device and the Miner anti-friction, roller rocker side bearings and truck lever connection safety straps are incorporated in the truck design.

The Automobile Cars

The general and detail design of the automobile cars is the same as for the all-steel box cars, except as follows: The body framing consists of 14 side post of ¼-in. pressed steel connected to the side plates by ¼-in. flat



One of the New Automobile Cars

gussets each of which is riveted to the side plate and posts. The door posts are of 4 1/16-in., 10.3-lb. Z-bar, with the outer leg cut off to suit the door weather strip. The side plates are reinforced at the door opening with a 5-in. by 3-in. by 5/16-in. angle, 13 ft. long. Nailing posts are located between the steel posts. The side lining is so arranged that the lower board is of 1¾-in. by 9-in. face, ship lapped, the bottom edge being set 3 in. above the top of the floor. Tongued and grooved lining 13/16-in. by 5¼-in. is used above this board.

The side doors are bottom supported, and allows a clear opening 10-ft. wide and 9 ft. 5 13/16 in. high. The steel doors are made in two sections. One section is 6 ft. 3¼ in. wide, located at the center of the car and the other is 4 ft. 7 9/16 in. wide. Both are of steel construction throughout. Camel-Gilroy door fixtures are used.

There are 24 wrought iron lifting rings on each car, secured to the side and end plates by wrought iron brackets with two ⅝-in. diameter rivets in each bracket. Four roping staples are provided which are located on the side sills near each bolster.

Special Equipment

Both the automobile and box cars are equipped with the same appliances except that Buffalo brake beams, brake beam supports and National Malleable and Steel Casting Company's steel couplers are used on the former. The brake equipment for both cars is the Westinghouse quick service, retarded release type, schedule KC-1012 with a 15-30-lb. pressure retaining valve and K-2 triple valve. All the air piping is of wrought iron, double strength. The brake beams on the box cars were furnished by the Damascus Brake Beam Company; the brake beam safety supports are of the Creco Drexel type on half of the box cars and Buffalo brake beam supports on the other half. The hand brakes are of the Ajax type, connected through a bell crank to the cylinder push rod.

The Baltimore & Ohio's "President" Class Locomotives

To be used in fast passenger service between Washington and New York—Tractive force, 50,000 *lb.*

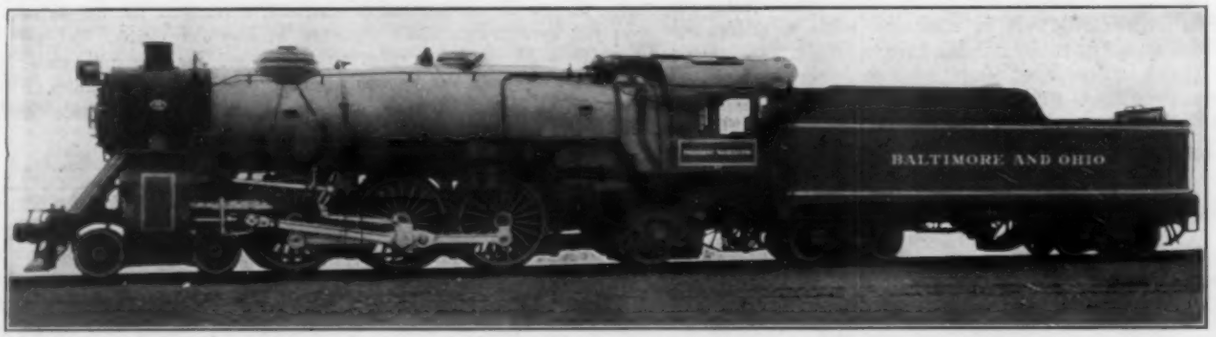
THE Baltimore & Ohio has recently placed in fast passenger service between Washington, D. C., and New York, 20 Pacific type locomotives built by The Baldwin Locomotive Works; an event of special interest in this, the centenary year of the railroad company. These locomotives, named after the first 20 presidents of the United States, are among the most powerful of their type in service, as their tractive force —considering the main cylinders only—exceeds that of any Pacific type locomotives thus far constructed. The service in which they are used has been operated for the past 40 years and has always been noted for its excellence.

At the World's Columbian Exposition, held in Chicago in 1893, the exhibit of the Baldwin Locomotive Works included a locomotive of the American 4-4-0 type, built for the Baltimore & Ohio, which represented the class of power then used in high speed service on the Philadelphia Division. A comparison of the principal dimensions of this locomotive and of the various types of power subsequently used in this service down to the present time, is given in one of the tables.

On the Washington-New York run it was formerly the custom to cut off the Baltimore & Ohio locomotives at Philadelphia, 132.7 miles from Washington. Now, however, the locomotives are run through to Jersey City, N. J., the trains using the tracks of the Reading Company and of the Central Railroad of New Jersey east of Philadelphia. This means a run of 224 miles each way and this is made by the fastest trains in five hours, representing an average speed of 45 m.p.h., with nine intermediate stops. To handle maximum trains of 10 or 12 cars on schedules like this, with reserve power for making up a reasonable amount of time, requires motive power of high capacity.

A High Tractive Force for Pacific Type Locomotives

These Pacific type locomotives are designated as Class P-7, and develop a maximum tractive force of 50,000 lb. with 201,000 lb. on the drivers. One of the locomotives



The "President Washington," One of 20 4-6-2 Type Locomotives Placed in Fast Passenger Service Between Washington, D. C., and New York by the Baltimore & Ohio

has been fitted with a booster on the rear truck and the others are so designed that boosters can subsequently be applied if desired. The tractive force is exceptionally high for a locomotive with 78-in. driving wheels, and it is developed by using 27-in. by 28-in. cylinders in combination with a steam pressure of 230 lb.

The boiler is designed along conventional lines, with a 38-in. combustion chamber and tubes 19 ft. in length. The arch is supported on two water tubes and two thermic syphons and the combined heating surface of the firebox, arch tubes, syphons, and combustion chamber is 394 sq. ft. Water spaces of liberal width are used, the mud ring being 6 in. wide at the front and 5 in. at the sides and back. The Type A superheater has 40 elements and is installed without a shut-off damper in the smokebox.

These locomotives are fired by duPont-Simplex stokers, the stoker engine being placed on the tender. The grates rock in four sections and do not have drop plates.

The Running Gear

The machinery has been designed for a running speed of 80 m.p.h. The crossheads are of vanadium cast steel, working in guides of the modified Laird, or hooded type. All the rods are of I-section, and the main rod backends and the side rod connections on the main pins, have floating bushings. The driving axles and main crank pins are hollow bored. The Walschaert valve gear, controlled by a power reverse gear, is applied to all the locomotives. The motion parts are of light design, the eccentric rods being of I-section. The valves are set with a maximum travel of 7 in. having a steam lap of 1⅛ in. and an exhaust clearance of ¼ in.

The frames are 6 in. wide and have substantial transverse bracing. The Commonwealth rear frame cradle is applied. The pedestal shoes and wedges are of brass. The rear truck is of the Delta type and the swing of the trucks, front and back, is sufficient to enable the locomotives to traverse curves of 18 deg. All the driving tires are flanged; the transverse tire spacing on the main wheels is 53⅜ in. and 53¼ in. on the front and back drivers.

These locomotives are equipped with force feed lubricators, driven from the valve motion and having six feeds, one to each steam chest, one to each cylinder barrel, one to the stoker engine and one to the air compressor. A drifting valve is provided and is piped into the saturated side of the superheater header. The operating handle of the drifting value is placed in the cab while the steam supply is taken through a shut-off valve which is tapped into the dome. The equipment further includes flange lubricators on the leading drivers, speed recorders and the General Railway Signal Company's automatic train control.

The tender has a one piece, cast steel frame and a rectangular tank. It is equipped with a water scoop, which is operated by a 12-in. air cylinder.

These locomotives, apart from their size and neat outline, present a striking appearance. They are painted in Pullman green, with gold and maroon striping, and gold lettering and marking. The color scheme is designed to harmonize with that of the trains which they haul.

Table of Dimensions, Weights and Proportions of Baltimore & Ohio Class P-7 Locomotives

Railroad	Baltimore & Ohio
Builder	Baldwin Locomotive Works
Type of Locomotive	4-6-2
Service	Fast passenger
Cylinders, diameter and stroke	27 in. by 28 in.
Valve gear, type	Walschaerts
Valves, piston type, size	14 in.
Maximum travel	7 in.
Outside lap	1⅛ in.
Exhaust clearance	¼ in.
Weights in working order:	
On drivers	201,000 lb.
On front truck	63,000 lb.
On trailing truck	62,000 lb.
Total engine	326,000 lb.
Tender	214,000 lb.
Total engine and tender	540,000 lb.
Wheel bases:	
Driving	14 ft.
Rigid	14 ft.
Total engine	37 ft. 1 in.
Total engine and tender	77 ft. 6 in.
Wheels, diameter outside tires:	
Driving	80 in.
Front truck	36 in.
Trailing truck	52 in.
Journals, diameter and length:	
Driving, main	12½ in. by 13 in.
Driving, others	11 in. by 13 in.
Front truck	7 in. by 12 in.
Trailing truck	9 in. by 16 in.
Boiler:	
Type	Conical
Steam pressure	230 lb.
Fuel, kind	Bituminous
Diameter, first ring, inside	78 in.
Firebox, length and width	120⅛ in. by 84¼ in.
Combustion chamber length	38 in.
Tubes, number and diameter	212 2¼ in.
Flues, number and diameter	40 5½ in.
Length over tube sheets	19 ft.
Grate area	70.3 sq. ft.
Heating surfaces:	
Firebox	235 sq. ft.
Combustion chamber	64 sq. ft.
Arch tubes	14 sq. ft.
Thermic syphons	81 sq. ft.
Tubes and flues	3,452 sq. ft.
Total evaporative	3,846 sq. ft.
Superheater	932 sq. ft.
Combined evaporative and superheating	4,778 sq. ft.
Tender:	
Water capacity	11,000 gal.
Fuel capacity	17½ ton
Wheels, outside diameter	36 in.
Journals, diameter and length	6½ in. by 12 in.
General data, estimated:	
Rated tractive force, 85 per cent	50,000 lb.
Weight proportions:	
Weight on drivers ÷ total engine weights, per cent	61.7
Weight on drivers ÷ tractive force	4.02
Total weight engine ÷ comb. heat. surface	68.3
Boiler proportions:	
Tractive force ÷ comb. heat. surface	10.47
Tractive force × diam. drivers ÷ comb. heat. surface	817
Firebox heat. surface, per cent of evap. heat. surface	10.5
Superheat. surface, per cent of evap. heat. surface	24.2

MAJOR H. O. SEGRAVE of England, driving an automobile of 1000 horsepower, made a record at Daytona Beach, Fla., on March 29, of 203+ miles an hour; and for one mile under favorable conditions, he was reported to have made 206 miles an hour. Major Segrave's car, the "Sunbeam," was made in England.

Comparison of Locomotives Used on Philadelphia Division, Baltimore & Ohio, Since 1893

Date	Type	Cylinders	Drivers diam.	Steam pressure	Grate area sq. ft.	Water heating surface, sq. ft.	Superheating surface, sq. ft.	Weight on drivers, lb.	Weight total engine, lb.	Tractive force, lb.
1893	4-4-0	20 in. by 24 in.	78 in.	165	24.7	1,693	...	75,200	116,400	17,300
1896	4-6-0	21 in. by 26 in.	78 in.	190	34.3	2,160	...	112,800	146,400	23,750
1910	4-4-2	22 in. by 26 in.	80 in.	205	55.5	2,350	...	116,000	190,000	27,400
1913	4-6-2	24 in. by 28 in.	76 in.	190	56.5	2,567	587	159,200	248,600	34,200
1919	4-6-2	25 in. by 28 in.	73 in.	200	66.7	3,341	794	167,100	275,770	40,800
1927	4-6-2	27 in. by 28 in.	80 in.	230	70.3	3,846	932	201,000	321,000	50,000

I. C. C. Announces Valuation Policy

Majority finds investment better basis than replacement cost for rate-making value

WASHINGTON, D. C.

IN announcing its first valuation for recapture purposes, on March 31, in the case of the St. Louis & O'Fallon Railway, the Interstate Commerce Commission took occasion to outline in a way it has never done before the principles on which a majority of the commissioners think the railways ought to be valued. Six commissioners hold that the value for rate-making purposes, upon which common carriers are entitled under the law to earn a fair return, "approaches more nearly the reasonable and necessary investment in the property than the cost of reproducing it at a particular time." They say that a system of valuation "based on actual legitimate investment" would have "many appealing features" but that, since actual original costs are not available, the valuation should be based on cost of reproduction at the 1914 level of prices, plus fair value of land as of valuation date, and brought down to date by making the necessary adjustments to reflect the property changes which have since occurred and to reflect any further depreciation, giving weight to increases in price levels only for new construction or replacements.

In effect the decision treats the question of railroad value for rate-making purposes as one of policy and the majority finds that the best policy is to adopt as a rate base the nearest practicable approximation of the cost of railroad property as estimated by it for the property in existence when it began its valuation work, plus the actual cost of net additions since that date. Adjustments in the percentage of fair return, the commission says, can be made much more readily and with greater justice to all concerned than adjustments in value.

"By the adoption of such a method of bringing values down to date," the report says, "we shall achieve the stability of rate base which we have found to be essential to a wise and just plan of public regulation. The method has the further advantages, also, that it is simple and easy of application and involves no great expense or delay and that its results are capable of reasonably accurate forecast. It insures fair treatment to the investor because a fair return will be secured for every dollar that has gone into the project, provided, of course, that traffic is available."

Four Commissioners Dissent

Four of the commissioners, however, say that the majority is attempting to make law rather than to follow it and that under the Supreme Court decisions, "we must accord weight in the legal sense to the greatly enhanced costs of material, labor and supplies during the periods of inquiry, * * * over those prevailing in the pricing period."

The minority also comment on the fact that the commission has heretofore indicated that corrective factors would be applied to the 1914 unit prices. They do not say that values as of later dates "would necessarily reflect in full enhanced costs," but rather that "such facts, in connection with all other relevant facts, would then be given due consideration."

Those who dissented were Commissioners Hall, Aitchison, Woodlock and Taylor. Commissioner Eastman wrote a concurring report in which Commissioner McManamy joined, replying to some of the arguments of the minority. The majority report was signed by Commissioner Meyer, and while the names of the others who concurred are not given, the other commissioners on the date of the decision, February 15, were Campbell, Esch and Lewis. There was one vacancy, as Commissioner Brainerd had not then been appointed.

Current Price Level Basis Condemned

Use of estimates of cost of reproduction at current prices "as the sole or controlling criterion" in the determination of value for rate-making purposes is found by the majority to be "improper and unsound." It is pointed out that the application of the current reproduction cost doctrine to an assumed rate base of 18 billions as of 1914 would have produced an aggregate for the same structures in 1920 of 41.4 billions, which would have been reduced to 31.3 billions in 1923. After referring to the tentative aggregate valuation of $18,900,000,000 adopted for the 1920 rate case, the report observes that approximately 4 billions has been added to the property investment since and that the railroads have prospered, although rates have been reduced since then, and that though they have earned on the average the fair return which the rates were designed to produce, the railroads, except in western territory, have shown little disposition to seek further general increases. A rate base determined by current price levels, the report says, "would in all probability require rates which the carriers would as a matter of self-interest hesitate to charge," and "under such a doctrine of fair value the carriers would as a matter of self-interest choose confiscation."

Valuation on National Scale Seen as New Problem for Court

Discussing the various Supreme Court decisions as to valuation the majority say that the great national problem presented is one "affecting public policy and welfare in a most profound way," and that "in important aspects it is a problem which has never before been presented to either a commission or a court."

"It may well be that the valuation of railroads on a national scale requires the beginning of a new chapter in valuation," the report says, commenting on the fact that previous valuation cases have related for the most part to local utilities.

Commissioner Eastman in his concurring opinion says that as to matters of intimate knowledge of the railroad situation the commission "occupies a daily front seat upon the stage, while the Supreme Court of necessity is only an occasional visitor in the balcony," and that the commission should not confine its attention to past utterance of the court nor deprive the court of the help which it may gain from the commission's special knowledge.

Short Lines Selected for Test Case

After applying its valuation principles to the facts of record as to the O'Fallon the commission issued an order directing it to pay to the commission within 90 days $226,880, representing one-half of the excess earn-

ings found for the period 1920 to 1923, inclusive, with interest.

The commission's report dealt with both the St. Louis & O'Fallon and the Manufacturers' Railway, two short lines operating in the vicinity of St. Louis, Mo., controlled by the Adolphus Busch estate. After deciding that the two roads were not operated as a single system and therefore were not entitled to combine their returns, the commission holds that the St. Louis & O'Fallon had net railway operating income in excess of 6 per cent for each of the years 1920-1923, inclusive, but that the Manufacturers' did not.

The case was selected as a test case on the question of valuation for recapture purposes and representatives of the railroads generally participated in the argument of last July on the proposed report put out on April 10 in the name of Examiner J. Paul Kelley. The commission's findings in general follow the recommendations of the proposed report to the effect that valuations under section 15-a of the interstate commerce act may be made in a more summary manner than valuations under section 19-a (the valuation act) and as to the method of bringing the valuation data up to date for recapture purposes, but the commission has gone much further in its discussion of the principles governing its entire valuation policy, saying that what is done in this case "we must in principle do for all the railroads in the United States." Numerous other recapture cases are pending before the commission.

Increased Compensation for Officers Held Improper

A collateral question was brought into the case as to the propriety of increases in the compensation of officers of the two roads during the period under consideration, and the commission added $21,450 to the net operating income for 1923 "as being excessive and improper charges to operating expenses," on this account.

It is expected that the case will be taken to the courts in the hope that it will afford an opportunity for a review of the commission's valuation theory, which had been hoped for in the Los Angeles & Salt Lake case. Counsel for the carriers had taken the position that the proceeding was premature because the commission had not completed the definite determination of their value under section 19-a.

An abstract of the text of the report and of the separate opinions follows:

Report of the Commission

We have before us in this proceeding four propositions: First, the propriety of these proceedings as they have been conducted under the provisions of section 15a of the act. Second, whether or not these carriers during the recapture periods constituted a group of carriers under common control and management and operated as a single system within the meaning of the statute. Third, the propriety of certain dispositions of income through charges to operating expenses during the respective recapture periods. And fourth, the property values and the amounts of income of the carriers subject to recapture.

Procedure in Recapture Cases

At the outset it is to be borne in mind that in no sense can these proceedings properly be treated as lawsuits. No issue is raised between parties. There is no controversy between disputants, each contending for protection of its rights. They are purely administrative proceedings wherein we are following the direction of Congress to create a contingent fund to be used in furtherance of the public interest in railway transportation. By the issuance of our orders as hereinbefore described, we have given the carriers an opportunity to assist in these proceedings by furnishing statements of the value of the properties used by them in transportation service and of their net railway operating incomes for stated periods.

Considering the carriers' assertion that for us us to proceed without first establishing the value of their properties under section 19a is premature, we may observe that in determining upon a course of procedure it is necessary to keep in mind the intent of Congress in enacting this legislation. The transportation act, 1920, inaugurated a new era in the regulation of the transportation systems of the country, considered as a whole. In Dayton-Goose Creek Ry. v. U. S., supra, the court referred to the recapture clause as the "key provision of the whole plan." There is nothing in the act to suggest that the benefits intended to accrue to the carriers and the public must be deferred to an indefinite future. The needs which prompted the legislation had existed for a long time and had been brought repeatedly to the attention of Congress. And when it was determined that the value of the properties of the carriers should be the basis upon which a percentage of the return should be computed for purposes of recapture, Congress well knew that the valuation of the railroads under section 19a of the act was not completed and could not be completed for several years.

When this proceeding was instituted we had not made a valuation of the properties of the O'Fallon or the Manufacturers' for any of the recapture periods or for any other period. It was desirable, therefore, in our opinion, to proceed in the manner outlined in order that the carriers might be afforded every opportunity to be heard on the questions of value of their properties and the net railway operating income for the respective recapture periods. We might have proceeded with propriety in an independent investigation, utilizing, so far as available, the results of our investigation under section 19a. The language of section 15a indicates the desire of Congress that the measures inaugurated be put in force as promptly as possible, and while we are required by paragraph (4) to "give consideration to all the elements of value recognized by the law of the land for rate-making purposes," it is also provided that "for the purposes of this section, such aggregate value of the property of the carriers shall be determined by the Commission from time to time and as often as may be necessary." There is an entire lack of direction as to specific methods of procedure, and Congress apparently entertained the view that valuations under section 15a might be made in a more summary manner than valuations under section 19a.

What we have said here regarding procedure in recapture cases is directed to the conditions presented in this case, but is equally applicable to all cases of a similar character. Having in mind the requirements of the statute, it seems imperative that findings of value and of income in these recapture cases be made promptly and at frequent intervals. With proper co-operation from the carriers, the procedure we have followed in this case will result in the disposition of these recapture cases without undue delay and at the same time will give the carriers every reasonable opportunity to protect their interests.

System Operation

The Manufacturers' owns and operates about 30 miles of track in St. Louis, of which 5 miles are classified as main track and 25 miles as sidings or industrial tracks. The Manufacturers' is purely a switching road, moving cars between various industries and the trunk lines, or the line of the Terminal Railroad Association of St. Louis, hereinafter called the Terminal.

The O'Fallon operates about nine miles of main line and 12 miles of yard track and sidings in Illinois, the former extending from coal mines owned by the Adolphus Busch estate westward to a connection with the tracks of the Terminal in East St. Louis. Through the medium of the Terminal its shipments are delivered at various points in St. Louis, some of which are on the tracks of the Manufacturers'. Control of the O'Fallon was acquired by the Busch interests in 1913. The industries of the controlling interests have never used more than 8 per cent of the coal shipments from the O'Fallon. The distance between the railroad of the O'Fallon and the railroad of the Manufacturers' is about 12 miles, and communication by rail between the two properties is effected over the tracks of the Terminal, including a bridge over the Mississippi River. Upon the completion of a new bridge, referred to as the municipal bridge, it is proposed to construct tracks which will effect direct physical connection between the Manufacturers' and the O'Fallon.

The Adolphus Busch estate owns a large majority of the stock of each carrier. The Manufacturers' has five directors and the O'Fallon seven. Three of these directors are common to both companies. All of the officers of these companies and all of the general office employees are common to both.

The portion of paragraph (6) of section 15a which the carriers contend is applicable under these facts reads as follows:

> For the purposes of this paragraph, the value of the railway property and the net railway operating income of a group of carriers, which the Commission finds are under common control and management and are operated as a single system, shall be computed for the system as a whole irrespective of the separate ownership and accounting returns of the various parts of such system.

In the absence of any contrary indication, it must be assumed

that Congress had in mind the usual meaning of the word "system" as applied to railroads. That meaning implies an operating relationship and operating unity and not mere ownership of tracks or methods of accounting. If Congress had intended that for purposes of recapture all railroads of common ownership should be grouped, there would have been no difficulty in expressing that purpose.

Counsel for the carriers insist that the purpose of the law of the land is to give to the "owners" of railway property a fair return and that these properties are controlled, managed, and operated by the same owners.

It is apparent from the quoted portion of paragraph (6) of section 15a that a system of railroads to come within the provisions of the act must be "a group of carriers which the commission finds are under common control and management and are operated as a single system." The three conditions must be existent at once: (1) Common control; (2) common management; and (3) operation as a system. That the same persons for convenience of handling accounts and economy of operation manage and operate two properties which are owned by one interest is not sufficient. There must be unity of purpose in the control, management, and operation to constitute the two roads "a group of carriers * * * operated as a single system."

It is clear that there is no unity of purpose in the control, management, or operation of these carriers. Only a very small percentage of the traffic originating on the O'Fallon moves to points on the Manufacturers' and practically no traffic moves from the Manufacturers' to the O'Fallon. There is no common financial responsibility or intermingling of financial obligations and benefits as between the two carriers. They stand apart in physical location, in the character of traffic handled, in the conduct of their financial transactions, and in the purposes for which they were separately created and are operated. Neither is necessary to the other and either road could be disposed of by the common owner without in any way affecting the other.

A system is something which is complete in itself, each part complementing the other parts to make up the whole. The two roads which we are asked here to consider as a system are separated by twelve miles of tracks of other railroads over which these carriers have no control. Considering the difference in the traffic handled and the lack of need of either road as a complement to the other, they could as well be a thousand miles apart. Common ownership or control is not the sole test. It is clear from the language used that Congress intended that we should consider as systems only those groups of carriers which are operated under common control and management as interrelated and interdependent parts of a single whole. It is equally clear from the evidence of record that the O'Fallon and the Manufacturers' are not such a group of carriers.

Operating Expenses

At the hearing following the reopening of these cases three principal matters were presented for consideration: (1) A sum of money which the board of directors of the O'Fallon voted should be paid to the president of that company. (2) A considerable increase in the compensation of the chairman of the board of directors of each carrier. (3) The cost of operation and revenue derived from special train service in transporting miners between East St. Louis and the mines of the O'Fallon Coal Company at O'Fallon.

The president of the two companies, William Cotter, assumed his duties in 1916 at annual salaries of $6,000 from each carrier, or a total annual compensation from these carriers of $12,000. In 1920 his salary as president of the O'Fallon was increased to $10,000, making his total annual compensation from these roads $16,000. The latter salary bases were in effect during the recapture periods under consideration. It was testified by the president that when he assumed his duties in 1916 the Manufacturers' was in fair condition physically but in poor condition financially, and that the O'Fallon was in fairly good condition financially but the roadbed and equipment particularly were in very bad condition; he took the position of president of both companies at the salaries stated with the understanding that should he be successful in rehabilitating the properties and improving their financial and physical condition added compensation would be arranged for later as conditions improved. This understanding was stated to be a verbal agreement with the chairman of the board of directors, which had never been reduced to writing. It is contended by the respondents that the sums hereinafter referred to which were paid to the president were paid in pursuance of this agreement following improved conditions on the two roads.

The total amount of money received by the O'Fallon from the Suburban in the readjustment of divisions on past shipments was approximately $28,000. The O'Fallon paid to its president the full amount of $25,000 agreed. Twelve thousand dollars of this sum was paid in December, 1923, and the remainder during the year 1924. It was testified that none of the amounts was actually paid until the money had been received from the Suburban. Nothing appears of record to indicate what services were performed by the president in addition to his regular duties which would justify the payment to him of any amount in excess of his regular salary, although he appeared as a witness and had full opportunity to explain.

In 1916 August A. Busch received a salary of $2,400 as chairman of the board of directors of the O'Fallon and a like salary as chairman of the board of directors of the Manufacturers.' From April 1, 1918, to March 1, 1919, he received no salary from either road due to his interpretation of an order of the United States Raiload Administration to the effect that unnecessary employees be eliminated from the pay rolls. On March 1, 1919, he was restored to the pay rolls of the O'Fallon at an annual salary of $2,400. Effective April 1, 1923, pursuant to the first paragraph of the quoted minutes, his salary as chairman of the board of directors of the O'Fallon was increased from $2,400 to $15,000 per annum, and effective the same date his salary for a like position with the Manufacturers' was established at $3,000 per annum. There is nothing in the record to indicate that the chairman of the boards of directors then took any more active part in the operation or financial affairs of these carriers than he did in 1918 when, under his interpretation of an order of the United States Railroad Administration, he caused his name to be stricken from the pay rolls of these carriers.

It is evident from a consideration of all the circumstances surrounding the transactions referred to that the payment to the president of the O'Fallon of the $25,000 received from the Suburban out of increased divisions for past shipments and the increase in the salary of the chairman of the board in contemplation of a continuance of increased divisions in the future is without any further justification than the availability of funds from the sources indicated. In view of the fact that the statute, as was recognized by the Supreme Court, makes the excess earned by an interstate railroad over a fair return on the value of its property a trust fund for the United States, we think it improper for the O'Fallon to have diverted to "operating expenses" the portion of such trust fund represented by the increased compensation to the president and the chairman of the board of directors. Such radical increases in compensation for these positions, over what had been paid for many previous years, require other justification than the mere availability of funds, which is, upon analysis, substantially the only justification offered of record. We are without authority to direct the actual disposition of income of carriers, but in our computation of the amount of net railway operating income for the recapture periods we shall not include as charges to operating expenses the increases in compensation to the president and chairman of the board of directors of the O'Fallon during 1923.

In our administration of section 15a we may not permit the purpose of the act to be defeated by the distribution under the guise of operating expenses of what is in reality excess income. It is not necessary that we find that the carrier intended such a result. Whatever the intent, the fact remains that the excess income which is subject to recapture is a trust fund in the hands of the carrier which never becomes its property, and no charges to operating expenses which are plainly in excess of reasonable operating needs can be permitted to deplete that fund. Manifestly considerable latitude must be given the officers of a carrier in determining what are reasonably necessary charges to operating expenses, but the evidence clearly indicates that the charges here in question were not within any latitude that may properly be allowed. We are therefore bound to exclude such sums from consideration in our determination of net railway operating income for the period during which such charges occurred.

The O'Fallon operates a special train for transporting employees of the O'Fallon Coal Company between East St. Louis and French Village, Ill., and O'Fallon. The tariff charge is a flat rate of $300 per month to the coal company regardless of the number of days the train is operated. The record contains an estimate by the auditor of the O'Fallon of the cost of operation of the special train. This estimate, while not a complete analysis of cost, indicates that the tariff rate at least covers the cost of operation and possibly a little more. The O'Fallon does not engage in passenger transportation. It does not appear that this special service imposes any burden upon interstate commerce which requires further consideration.

We have discussed above the objections of the carriers to a finding of value at this time and have shown the necessity for adopting a procedure in determining value for recapture purposes differing somewhat from the procedure followed under section 19a.

Value to Be Determined Is "For Rate-Making Purposes"

Having in mind the provisions of paragraph (4) of section 15a, it is clear, however, that the value to be determined for the purposes of recapture under that section is, like that to be determined under section 19a, the "value for rate-making purposes." Unless otherwise specified, the word "value" herein is used in the sense of rate-making value as defined and discussed in our numerous valuation cases.

Counsel further object to a finding of value for that portion of the year 1920 during which section 15a was in effect. This objection is based upon a narrow construction of the first sentence of paragraph (6) of section 15a reading in part, "If under the provisions of this section, any carrier receives for any year a net railway operating income." That this section is not subject to so narrow a construction is apparent from the provisions of paragraph (9) that "The commission shall make proper adjustments to provide for the computation of excess income for a portion of a year, and for a year in which a change in the percentage constituting a fair return or in the value of a carrier's railway property becomes effective."

It was contended by counsel on argument that the value contemplated by section 15a is the aggregate value of the railway property of the carriers of the country as a whole or as a whole in such rate groups as we may designate, held for and used in the service of transportation; that there is no authority under paragraph (4) of section 15a to find the value of individual railroads, but that the provisions of that paragraph authorize us, from time to time and as often as may be necessary, to determine the aggregate value of such property and to change the aggregate value so determined, either up or down, as the values of the individual roads are computed under the provisions of section 19a. This contention loses sight of the fact that the aggregate value referred to must be made up of the values of individual roads, and, further, that the prescribed portion of the excess income over a fair return received by "any carrier" must be paid into the contingent fund by the individual carrier. There is no provision for basing a determination as to recaptureable income upon the aggregate value, and this would necessitate a pooling of the net railway operating incomes of the carriers as a whole or in rate groups for any period for which such aggregate value might be determined. The contention further loses sight of the fact that paragraph (6) definitely provides that the individual values for recapture purposes shall be determined "in the manner provided in paragraph (4)."

It is further contended that the aggregate value may be determined at once, although no definite method of making such determination was advanced, but that the finding of individual values for recapture purposes must be postponed until after values have been ascertained under the provisions of section 19a. The recapture provisions of section 15a apply to the value of the property and the net railway operating income of the carriers for each year or portion thereof during which there is an excess over a fair return. These values may change from year to year, and certainly the net railway operating income of the individual carriers will show great variance from year to year. The values under section 19a are to be found once for every common carrier subject to the provisions of the interstate commerce act, and paragraph (f) of that section provides that thereafter we "shall from time to time, revise and correct" our valuations. To delay the operation of the recapture provisions of the act until such valuations or revisions thereof under section 19a are made for each of the years in which the individual carriers might be subject to recapture would most certainly defeat the purpose of such provisions.

The statute directs that in determining values pursuant to section 15a we shall "give due consideration to all the elements of value recognized by the law of the land for rate-making purposes." In the methods of valuation which we have followed in this proceeding we have endeavored to give heed to this direction, having in mind not only the conditions existent upon these particular carriers, but also the necessity in the application of these methods to the carriers generally of protecting the private owners of railroad property in their constitutional rights and at the same time of assuring to the public the continued maintenance and operation of a transportation system capable of rendering efficient service at reasonable rates.

Value and Income of the O'Fallon

Before considering these methods or principles of valuation we shall summarize the evidence with respect to the property of the O'Fallon held for and used in the service of transportation. We have made no final ascertainment in the manner contemplated by section 19a of the value of that property. The investigation for that purpose is in progress, but has not been concluded. Its immediate object is the ascertaining and reporting of the value for rate-making purposes as of June 30, 1919. As of that date all property owned or used for common-carrier purposes has been inventoried and its condition noted, and an examination of the records and accounts has been made. Certain of the results of that investigation are available, and exhibits setting these forth were made a part of the record herein. The usual accounting, engineering, and land reports, prepared by our bureau of valuation, in accordance with instructions, rules, regulations, and methods approved by us had been served upon the carrier prior to the commencement of this proceeding. Testimony and exhibits presented by the carrier and the bureau in this record, in so far as these relate to the value of this carrier's property, make reference to, and to a considerable extent are based upon, these underlying reports. The reports themselves were introduced in evidence in exhibit form.

The information contained in these underlying reports is therefore available for consideration in determining the value of the property of the carrier held for and used in the service of transportation, within the meaning of paragraphs (4) and (6) of section 15a, for the several recapture periods. Such reports were prepared in final form by the bureau only after the carrier had been given the usual preliminary opportunity to take informal exceptions to them, and to confer with the bureau regarding such exceptions.

The following table shows the costs of reproduction new and reproduction less depreciation of the property of the O'Fallon, exclusive of land, on June 30, 1919, and on December 31, 1920, 1921, 1922, and 1923, based upon the 1914 unit prices:

Date	Cost of reproduction new	Cost of reproduction less depreciation
June 30, 1919	$927,884	$678,506
Dec. 31, 1920	936,732	658,531
Dec. 31, 1921	950,553	692,923
Dec. 31, 1922	951,974	674,769
Dec. 31, 1923	940,708	645,466

No attempt was made by witnesses for the bureau to restate these estimates upon the basis of prices for the four recapture periods. A witness for the bureau testified, however, that in his opinion, as a result of his investigation, the ratios of the current unit prices at the end of each of the four recapture periods, as compared with the 1914 unit prices, were represented by composite index numbers as follows, the 1914 unit prices being considered 100: For Dec. 31, 1920, 230; for Dec. 31, 1921, 195; for Dec. 31, 1922, 157; and for Dec. 31, 1923, 174. These index figures, the witness explained, were developed from a study of many sources of information, including reports of carriers in response to our valuation order No. 14, which reports show prices paid for major purchases of materials, and rates of compensation paid for labor, information obtained from bureaus of the Government, including reports of the Bureau of Labor Statistics of the Department of Labor, trade papers, and correspondence with manufacturers.

At the time of the hearing the tentative valuation report had not been issued, and the carrier had consequently been given no opportunity to present a formal protest of such a tentative valuation. In view, however, of the completeness and satisfactory character of all of the evidence in this record regarding the value of the property devoted by the O'Fallon to common-carrier service on June 30, 1919, and throughout the respective recapture periods, it is practicable to determine the value of such property for rate-making purposes as of the dates in question.

We now come to the consideration of how value shall be ascertained or derived from the facts of record.

Valuation counsel for western carriers has urged us to dispose of this case by itself and upon its own merits. That is the correct procedure. During the entire history of the commission it has been its practice to decide cases upon their individual merits and particular facts. When, however, counsel goes further and suggests that in this case we shall not give consideration "to what is to be done with the railroads of the country as a whole" we can not assent. We are dealing here with one small railroad. Nevertheless, what we do in this case we must in principle do for all the railroads in the United States. Whatever our decision, its effect in dollars and cents is relatively unimportant in this particular case. But, having in mind, as we must, the whole railroad situation, the decision is of the greatest consequence from both private and public viewpoints.

"Great National Problem Presented"

There is here presented, in reality, a great national problem affecting public policy and welfare in a most profound way. In essence it is present as clearly as it could be in the case of a railroad involving hundreds of millions of investment. In important aspects it is a problem which has never been presented to either a commission or a court. We must carefully review the

significance to the nation of the decision which we make in this case in its bearings on the relation between all the railroads and all the people of the United States. It may well be that the valuation of railroads on a national scale requires the beginning of a new chapter in valuation.

Commissions and courts, including the Supreme Court of the United States, have had to deal with a multitude of valuation cases, relating for the most part to local utilities—water, gas, electric, and power properties. From a composite of all these cases various principles of valuation, frequently standing in striking contrast to one another, have been evolved by interested parties according as their interest lies. Before we apply any of these so-called principles, we believe it to be vital to take a general survey of the entire situation, in order that conclusions may be reached which in their ultimate effect upon the nation will be wise and just.

The basis of our authority in ascertaining and reporting valuations of common-carrier properties is an act of Congress passed in pursuance of its powers under the commerce clause of the Constitution. Upon the same powers rest the recapture provisions, which were designed by Congress to create a fund to be used "in furtherance of the public interest in railway transportation." Our problem in the administration of the valuation and recapture provisions is national in its scope and in its consequences, and is affected by a vast variety of considerations that either do not enter into, or are less easily perceived in, problems incident to the regulation of local public utilities. Limitations of issues, facts, or viewpoint impair many of the precedents which we are asked to follow by routes as divergent as the interests of those who make the requests.

Court Decisions

The determination of the limits within which public regulation of railroads and public utilities may lawfully function has been a matter of slow growth. Many years ago the Supreme Court held in Peik v. Chicago, etc., Railway Co., 94 U. S. 164, 178.

Where property has been clothed with a public interest, the legislature may fix the limit to that which shall in law be reasonable for its use. This limit binds the courts as well as the people. If it has been improperly fixed, the legislature, not the courts, must be appealed to for a change.

The fundamental duty of the courts, so far as public regulation is concerned, is to prevent confiscation. So far as the States are concerned, the constitutional prohibition is in the fourteenth amendment, which provides that no person shall be deprived of property "without due process of law." So far as the Federal Government is concerned, the prohibition is in the fifth amendment, which provides also that private property shall not be "taken for public use without just compensation." Obviously neither one of these prohibitions defines confiscation, and their application to public regulation of railroads and utilities is a matter of judicial interpretation. Out of this necessity for interpretation grew the "fair value" rule, first enunciated in Smyth v. Ames, 169 U. S. 466, which lies at the root of this and other valuation proceedings.

In that pioneer case the court held that the "basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public," and that "what the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience." It laid down no definite rule for determining "fair value" but enumerated certain "matters for consideration" to be given "such weight as may be just and right in each case." Later, in the Minnesota Rate Cases, 230 U. S. 322, 434, the court made it clear that the determination of such value is "not a matter of formulas, but there must be reasonable judgment having its basis in a proper consideration of all relevant facts." Some of the "matters for consideration" indicated in Smyth v. Ames are no longer emphasized; it is fair to say that they have been discarded in the progress of thought on this problem. One of them, however, was "the present as compared with the original cost of construction," and it is this factor, rechristened "cost of reproduction new at prices current on valuation date," that we are now urged to take as the basic measure of "fair value" to the exclusion of all other factors, except to the extent that it may be augmented by an allowance for something called "going value," which is vaguely defined in many different ways.

Cost of Reproduction

The importance of the question has been magnified by the great increase in the general price level resulting from the World War. When we undertook the valuation work under section 19a it was a question of much less importance, but the price revolution which has since taken place has elevated it to first rank.

The use of cost of reproduction is by no means free from practical difficulties. For example, the record here shows that there was a dearth of reliable data from which an accurate estimate of such cost could be made for the period 1920 to 1923. In proof of this assertion reference need only be made to the sources of the data relied upon by the witnesses both for the bureau and for the carriers. Their estimates for those years were founded in large part upon manufacturers' records and price statistics appearing in various publications, and to a lesser extent upon cost of construction actually incurred by railroads in that period. There was, in fact, very little new railroad construction in those years.

Synthetic estimates of cost of reproduction based upon statistics showing price and wage changes do not make allowance for improved methods of assembly and construction.

But this is only an incidental objection to the use of current cost of reproduction as the basic measure of "fair value." As we have seen, the constitutional prohibitions contain no definition of confiscation. The controlling factor in the last analysis is the Supreme Court's conception of what is just and in harmony with a sound public policy. Nor is there any abstract standard of justice that can be applied. The question in many aspects is one of fact, and the answer, if it is to be wise and sound, requires knowledge of actual conditions and a consideration of practical results.

The end in view, as we have stated, is the maintenance of an adequate national railway transportation system. Such a system, so long as it is privately owned, obviously can not be provided and maintained without a continuous inflow of capital. Obviously, also, such an inflow of capital can only be assured by treatment of capital already invested which will invite and encourage further investment. We think it must be conceded that under a system of public regulation which produces such a result private property can not be confiscated. Furthermore, public regulation of railroads which is to any considerable degree more liberal to the private owners than is necessary to maintain good credit under reasonably prudent, economical, and efficient management can not be justified. Along with the "fair value" rule this statement in Smyth v. Ames, supra, at page 544, should never be forgotten:

> A railroad is a public highway, and none the less so because constructed and maintained through the agency of a corporation deriving its existence and powers from the State. Such a corporation was created for public purposes. It performs a function of the State. Its authority to exercise the right of eminent domain and to charge tolls was given primarily for the benefit of the public.

More recently, in Dayton-Goose Creek Ry. v. U. S., supra, at page 481, this idea was expressed as follows:

> By investment in a business dedicated to the public service the owner must recognize that, as compared with investment in private business, he cannot expect either high or speculative dividends but that his obligation limits him to only fair or reasonable profit.

If such limitations are to be imposed, plainly stability of income and return is a prime requisite. To say nothing of the disastrous effect upon the business and commercial world, violent fluctuations from heights of prosperity to depths of poverty are railroad conditions utterly inconsistent with the necessary attraction of private capital. A corollary of this proposition is that there must be assurance of stability in the rate base. If it is permitted to fluctuate with each change in general price level, and if rates must be adjusted accordingly, there can be no promise of a stable return to investors. But if current cost of reproduction is to be used as the basic measure, wide and frequent fluctuations both up and down are inevitable.

As hereinafter indicated, we arrive at a basic single-sum value as of June 30, 1919, of $850,500. This figure includes $50,500 for lands and $50,000 for working capital. The value exclusive of land and working capital is $750,000. Using the latter figure as a base merely for purposes of comparison and applying thereto the ratios referred to herein as indicating the average rise in wages and prices over the 1914 level for the years immediately following June 30, 1919, and adding to the result $100,500 to cover land and working capital, the rate-making values for the respective recapture periods are shown to be as follows:

Period ended	Ratio	Rate-making value
June 30, 1919	100	$850,500
Dec. 31, 1920	230	1,825,500
Dec. 31, 1921	195	1,563,000
Dec. 31, 1922	157	1,278,000
Dec. 31, 1923	174	1,405,500

Different compilations yield different ratios, and those developed by the carrier are greater than the bureau's ratios. If, as is urged by many railroad counsel, current cost of reproduction virtually determines "fair value," the rate bases of the O'Fallon for the respective recapture periods would be not less than the amounts shown in the above table. Using these bases it would have been necessary in 1920, disregarding other changes, to have

increased the element in the rates and charges representing return by 114.64 per cent, in order to have given the owners of the property the return to which they are entitled. This would have been in addition to increases made necessary by higher operating costs. In 1921 there would have been a reduction of 14.38 per cent in this element; in 1922 a further reduction of 18.23 per cent; while in 1923 there would have been an increase of 9.98 per cent. The variations in the rate levels so required would have been about 30 per cent of these percentages, assuming an operating ratio of 70; but even these would have been large fluctuations.

Current Cost Basis Applied to All Roads

Let us consider the effect of applying this doctrine of current reproduction cost to all railroad property in the United States. For convenience in calculation and for want of an accurate figure, we shall assume 18 billions as the value of 1914 unit prices of structures existing on June 30, 1919. The aggregate value which we used in Ex Parte 74 at the time of the general rate increase of 1920 was $18,900,000,000 for all property used for transportation purposes. But taking 18 billions as a base and applying the bureau's ratios, the value of precisely the same structures would have become 41.4 billions in 1920, 35.1 billions in 1921, 28.3 billions in 1922, and 31.3 billions in 1923. In other words, assuming a static property there would have been a gain of 23.4 billions in 1920, a loss of 6.3 billions in 1921, a further loss of 6.8 billions in 1922, and a gain again of 3 billions in 1923. These huge "profits" and "losses" would have occurred without change in the railroad property used in the public service other than the theoretical and speculative change derived from a shifting of general price levels. To put it still more graphically, by the application of the current reproduction cost doctrine the assumed base of 18 billions would have been increased in 1920 by a sum greater than the present national debt (about 19 billions), and the transportation burden upon the people of the country would have been correspondingly increased without the investment of a single dollar by those who would reap the benefits.

Of course the railroad property in the United States during this period was not actually static. There were continual accretions. But this illustrates another angle of the problem. During the seven years 1920 to 1926, inclusive, there was an approximate net investment in additions and betterments and new construction of 4 billions. These were paid for at then current prices, all above, in many cases far above, present prices. Assuming that there has since been an average decline in unit price level of 25 per cent, a valuation under the current reproduction cost doctrine would wipe out one billion of that additional investment. The effect upon any railroad entirely or largely constructed during the period 1920 to 1926 may be imagined.

Roads Have Not Asked for Rates Based on Current Price Levels

In contrast with these illustrations of the results which would have flowed from the current reproduction cost doctrine, let us consider the actual course of events. Throughout the war period, when the railroads were under Federal control, the private owners were paid by the Government for the use of their property a rental based upon average net railway operating income for the three years June 30, 1914-1917, inclusive. This rental was determined without regard to the rapidly mounting general price level, but was generally satisfactory to the owners. In 1920, after the return to private control, we authorized general increases in rates based upon an aggregate value figure which was less than the aggregate recorded investment in road and equipment and working capital which the carriers wished us to use as a base. They did not then ask for a "value" based on the current price level, and accepted without complaint the increases authorized. In 1922 we required a general reduction in rates, using as a basis an aggregate value similar to that used in 1920. This reduction was not contested by the carriers. In 1926 we denied a general increase in rates proposed by the carriers in the western district, and in that proceeding the carriers, while arguing that the current price level warranted a far higher "value," asked only that their aggregate recorded investment in road and equipment and working capital be used as a base. They conceded that traffic probably could not bear rates based on any higher amount.

It appears, therefore, that since the price revolution brought about by the World War, the railroads have not had nor have they sought returns based upon "values" swollen in harmony with the rise in general price level. Since the passage of the transportation act, 1920, we have allowed them rates intended to produce, on the average, a fair return upon aggregate values far below, in all probability, the values which would have resulted from the current reproduction cost doctrine. As a matter of fact, the railroads have not earned, on the average, the fair return which the rates were designed to produce. Yet they have accepted our findings and have, except in western territory to the extent above indicated, shown little disposition to seek further general increases. They have realized that to do so would be to risk conflict with inexorable economic conditions.

Now, what have been the results from this state of facts? As stated above, during the period 1920-1926, inclusive, the investment in railroad property increased by 4 billions of dollars. A substantial part of this money was derived from income, but much of it was obtained by the sale of new securities. The market for railroad securities since the passage of the transportation act, 1920, has steadily improved and the general trend of interest rates has been downward. The credit of the railroads in general is now excellent, and the time seems to be approaching rapidly when many of them will be able to finance not only through bonds and notes but by issues of new stock. Already some of them are financing their needs in this way. As shown above, investors have not been led to believe, either by our own acts or by the acts of railroad managers, that rates would be increased in an effort to secure income such as the current cost of reproduction doctrine would demand. Since 1920 the general trend of cost of reproduction now has been downward, but, on the other hand, the trend of the market prices of railroad securities has been very definitely upward. It is a matter of common knowledge that the increase in aggregate market values since 1920 has been very great. With exceptions in certain sections of the country it will be conceded that the railroads are now in better credit and financial condition, in all probability, than at any time in their history. The standard of service is clearly better than ever before. The exceptional situations are receiving consideration, with a view to their improvement. The need for improvement in such situations is due not to any deficiency in the aggregate values which we have used as a base in the general rate cases but to failure to earn a fair return upon such values.

Under such circumstances can it be said with any show of reason that the private owners of this property devoted to the public service are suffering confiscation? Yet the current cost of reproduction doctrine would lead to that conclusion. It would even lead to the conclusion, indeed, that a large measure of confiscation exists in the case of some of the most prosperous railroads of the country, whose securities of all descriptions find a ready market at most favorable prices.

If it had been applied in 1920, the current reproduction cost doctrine would have required general increases in rates very much higher than those which we authorized. The latter ranged from 25 to 40 per cent. It is quite conceivable that with the then current reproduction cost as the rate base increases of from 75 to 90 per cent might have been necessary. Neither the country nor the carriers could have endured such a rise in freight charges. Even now, when the general price level is materially lower than it was in 1920, a rate base so determined would in all probability require rates which the carriers would as a matter of self-interest hesitate to charge. This amounts to saying that under such a doctrine of fair value the carriers would as a matter of self-interest choose confiscation. Plainly a doctrine which leads to such a conclusion is irrational.

The practical consequences of the current reproduction-cost doctrine may be viewed from yet another angle. Approximately one-third of the investment in railroad property is represented by common stock. The remaining two-thirds is represented by bonds, notes, or preferred stock, the holders of which are limited to a fixed or maximum return. The benefits of an excess in valuation from a rise in the general price level would, therefore, be reaped three-fold by the holders of common stock. The results so accruing from a heavy increase in prices, such as was brought about by the World War, would involve returns to the common-stock holders grotesque in their proportions, and particularly grotesque when considered as the limit below which confiscation would ensue. Of course, this is on the assumption that the traffic would bear the increase in freight rates necessary to produce such returns, an assumption which, as we have seen, is probably contrary to fact.

Theoretically the holders of common stock would suffer corresponding losses if the general price level should shift downward rather than upward, and this risk of loss is urged as justification for any gains that might accrue. We say "theoretically" because as a practical matter no consequences could be permitted to occur which would endanger the maintenance of a transportation system adequate to the national needs.

The conception of a rate base and returns thereon fluctuating up and down with changes in the level of general prices is a conception which, if carried into actual operation, could have no appeal except to stock-market speculators. It would be difficult to conceive of any plan more conducive to the encouragement

of unrestrained speculation in railroad shares than such a method of valuation.

We come back, after this exploration of the field of practical results, to the thought that stability is a prime requisite in this situation, both for investors and for the country as a whole. There is nothing more disturbing to commerce and industry than the prospect of frequent and abrupt shifts in the general freight rate level; and there is nothing more disturbing to investors, as distinguished from speculators, than the prospect of frequent and wide shifts in security values. Public regulation of railroads, if it is to be successful, must rest upon a firm foundation and be guided by principles which will lend confidence to industry and investment. The current reproduction cost theory of "fair value" is utterly inconsistent with this end, and in our judgment it is equally inconsistent with any sound conception of justice.

Just as the water of the Mississippi at New Orleans is composed of waters from myriads of different sources, so a railroad system is a composite of materials acquired at myriads of different prices and at infinitely varying periods of time, and put into the plant at many different levels of wages. Neither the highest price nor the lowest, nor the average, nor any price in between, represents the outlay made for the system. The only thing that does and can represent what the investor has contributed to the value of the property is the aggregate amount which was paid for the many different items in the perpetual stream of metamorphosing railroad structures.

Advantages of Valuation Based on Actual Investment

A system of valuation for rate-making purposes based on actual, legitimate investment would have many appealing features. By reason of the replacements of units of railroad property which are continually taking place, such a system would tend to adjust itself to changes in the general price level. But this tendency would be manifested so gradually and slowly that changes in rates necessitated by the value changes could be made without violence or disruption to business or any other interests. Such a system would also recognize and protect every dollar invested in railroad property, whether at high prices or at low prices.

But there are practical difficulties in the way of the adoption of such a system. As we have already pointed out, there is an almost complete lack prior to 1907 of the definite and dependable records which would be essential. In reality, the valuation problem is divided into two parts, which can be quite clearly distinguished, and the date when our valuation work under section 19a began marks roughly the division line between these two parts. Since that date we have required the carriers to report in detail all property changes and their costs, and these costs can be verified and checked. In the case of all property which came into existence prior to that date we have an inventory made by our own engineers, but no complete, reliable information as to original costs. The first part of our problem, therefore, is to determine upon a fair single-sum value for this older property. The second part of our problem is to bring this value down to any subsequent date, in the light of the property changes since our valuation work began, of which we have complete reports.

Method of Valuation Described

The methods which we have followed in determining the basic values of the older property have been described at length in our valuation reports under section 19a. Briefly, we have had before us the cost of reproduction new of the structural portion of this property estimated on the basis of our 1914 unit prices, coupled with the knowledge that costs of reproduction so arrived at were not greatly different from the actual original costs. We have had complete information as to the depreciation of this property, in other words as to that portion which in reality had ceased to exist because of the consumption of service life. We have had complete information as to the value of the railroad lands, based on the contemporaneous market values of adjoining and adjacent lands. We have had information, as complete as could be secured, relative to the financial and corporate history of the property, including its past earnings. We have further had such information as could be developed with reference to possible appreciation in the value of certain parts of the property because of better adaptability for use, and with reference to such other matters as the carriers desired to bring to our attention.

From this accumulated information we have formed our judgment as to the fair basic single-sum values, not by the use of any formula but after consideration of all relevant facts. In our opinion these judgments have been reasonably liberal to the carriers. In all probability they are above rather than below the amounts which would have resulted if complete records had been available and the investment theory of valuation had been employed. But the public, as represented by the Government, must bear some of the responsibility for the absence of records, and it is fair, under all the circumstances, that the basic valuations should be reasonably liberal.

In more than 400 reports relating to the value of individual railroad properties we have said:

> The estimates of cost of reproduction covered by this report are based upon what is referred to herein as the 1914 level of prices, while the present values of the common-carrier lands covered by the report are based upon the fair average of the normal market value of lands adjoining and adjacent to the rights of way, yards and terminals of the carrier, as of valuation date. This discrepancy will be removed when the commission adjusts to later dates, in accordance with the requirements of the Valuation Act, the final value herein reported.

What we are doing in the instant case is in conformity with our understanding of this language.

When it comes to bringing these basic valuations so arrived at down to any subsequent date, however, no good reason appears for doing more than making the necessary adjustments to reflect the property changes which have since occurred and which have been fully reported to us, and to reflect any further depreciation of the property. By the adoption of such a method of bringing values down to date we shall achieve the stability of rate base which we have found to be essential to a wise and just plan of public regulation. The method has the further advantages, also, that it is simple and easy of application and involves no great expense or delay and that its results are capable of reasonably accurate forecast. It insures fair treatment to the investor because a fair return will be secured for every dollar that has gone into the project, provided, of course, that traffic is available. Whatever the price level may be, however severe the fluctuations, this method will result in yielding a fair return on every dollar invested and remaining in the property. This is the greatest assurance which can be held out to prospective investors. No stronger inducements can be offered in fairness to all the interested parties.

Fair Return

It should not be forgotten that the value to be used as a rate base in the process of public regulation is only one element in the constitutional protection against confiscation of property. The other element is a "fair return" upon such value. Whatever the rate base, we are enjoined and required to so adjust the "fair return" that investment in railroad facilities will be encouraged and promoted and the companies maintained in good credit. If this end be accomplished, there can, in our opinion, be no confiscation. Moreover, adjustments in "fair return" necessary to accomplish this purpose can be made much more readily and with greater justice to all concerned than adjustments in "value." The prime requisites for the rate base, as we think we have made clear, are stability, reliability, and relative ease of adjustment to property changes.

In this connection it is significant that when the legislation of 1920, of which section 15a is a part, was under congressional consideration there was offered in behalf of the carriers a proposed bill in which their recorded investment in road and equipment was made the sole element in the determination of the rate base. It is also worthy of note that when the legislation of 1920 was under such consideration a representative of this commission on September 26, 1919, in response to a question, publicly informed the congressional committee that he knew of no warrant for an assumption "that the commission will base the value of the property wholly or in part on present prices."

It has been suggested that while it may be going too far to take current cost of reproduction as the basic measure of value, some weight ought to be given to changes in general price levels. Under the method outlined above we do give weight to such changes in so far as they have been reflected in prices paid for new construction or replacements, and we value lands at their prevailing market values. We know of no other way of giving weight to this factor which is not dependent upon caprice, unless full weight be given under the current reproduction cost doctrine. There is, in our judgment, no intermediate process possible which is capable of being applied by any rule independent of the caprice of those who apply it.

With this general discussion of principles we return to the particular problem confronting us in this case.

In the report of our engineers the costs of reproduction new and less depreciation of road, equipment, and general expenditures, exclusive of lands, are stated in the amounts of $927,884 and $678,506, respectively. The property included in these estimates was that inventoried as of June 30, 1919, to which the 1914 unit prices had been applied. The actual cost of items included in the inventory, installed between July 1, 1914, and June 30, 1919, exceeded by $38,843.12 the amount of the estimated reproduction cost new of such items, as previously explained. In the report of our land appraisers, the value of the lands devoted to carrier purposes on June 30, 1919, was shown to be $50,556.25. The evidence, discussed above, shows that a proper amount to

include in the value for rate making for working capital was $50,000. If the amount stated as cost of reproduction new is added to the values of the three other items, the sum is $1,067,283.37. If the amount stated as cost of reproduction less depreciation is substituted for the cost of reproduction new estimate, the sum is $817,905.37.

Valuation of O'Fallon as of 1919

The capitalization of the O'Fallon and the history of its organization, financing, and results of operation as set forth in the report of our accountants are not in dispute. This record does not contain any evidence questioning the accuracy of the detailed inventory of 1919, made in the field by our engineers, nor disputing the adequacy of the 1914 unit prices. In the 1919 reproduction cost new and less depreciation schedules are included as overheads such general expenditures incident to construction as expenses of organization, general officers, law, stationery, printing, taxes on structures and interest during construction, which, together with construction engineering, also included, aggregate 5.5 per cent of the total costs of reproduction less depreciation estimates. The inventoried quantities include large amounts added during operation, as a part of maintenance, which under a different method of valuation might be regarded as coming under the head of costs of appreciation. Weighing the figures previously mentioned in the light of these considerations and the entire record, and viewing the carrier as a common carrier in successful operation and with an established business, we conclude that the value for rate-making purposes of the entire common carrier property of the O'Fallon on June 30, 1919, was $850,500.

It is urged on behalf of the O'Fallon, in effect, that the value of its property in 1914 was not less than the cost of reproducing it at prices then prevailing, and that its value in 1920 was at least its cost of reproduction at prices prevailing at that time. Our reasons for disapproving this doctrine have already been given at length, and even if the cost of reproduction new in 1920 were to be regarded as a controlling element there is not in the present record evidence showing what it might have cost to reproduce the property of the O'Fallon at that time. The only evidence in this respect is that of the relation of general prices in 1914 and in 1920 and the other recapture years. Costs of railroad building, owing to improvements in methods and economies thereby effected, did not vary greatly during the period of 20 years preceding 1914, although the prices of labor and material fluctuated. There is no testimony here as to how much it cost to build any railroad or any substantial part of one in any of the recapture periods, and for that reason it is impossible to make a comparison of such costs in the two periods. It is not safe to assume, as the O'Fallon has assumed, that costs of building railroads have varied in recent years in direct ratio to the variation in costs of commodities in general use, or in the costs of materials or labor generally.

Value rests upon a number of elements. The value of the property of railroads for rate-making purposes, which is construed to be the value of property devoted to common-carrier purposes upon which common carriers are entitled under the law to earn a fair return, approaches more nearly the reasonable and necessary investment in the property than the cost of reproducing it at a particular time. In those cases, of which there are many and of which the present case is an example, where it is impossible to ascertain and analyze the actual investment, resort must be had to the application, to complete property inventories, of unit prices derived from actual costs paid by carriers over a considerable period of years when railroad construction was being carried on extensively.

The line of railroad of the O'Fallon, approximately 9 miles in length, was constructed in the years from 1896 to 1900, both inclusive. While a satisfactory statement of the carrier's actual investment, or of the original cost of its property, is not available, much thought and effort have been devoted by us in our valuation work to determine the costs of building railroads during the years immediately following the period when this carrier's property was being built. The results of that study are reflected in the unit prices, which are herein termed 1914 unit prices, used in making the reproduction cost estimates of this property.

Subsequent Investment Added to 1919 Value

The method which we therefore find logical and proper for determining the value in the subsequent recapture periods is to add to or subtract from the 1919 value the net increases or decreases in the investment in property devoted to transportation service as determined from the carrier's returns to valuation order No. 3, with due regard to the element of depreciation.

Applying this method the value for the purposes of this proceeding of the property which the O'Fallon was devoting to the service of the public during the 10 months ended December 31, 1920, was $856,065. This amount is composed of the sum of $850,500, which includes $50,500, the value of the common-carrier land, and the amount of $50,000 to cover the amount of the carrier's necessary investment in a stock of materials and supplies needed as working capital in carrying on its common-carrier operations during that period, and further the sum of $4,133, which has been found to be the net cost of additions and betterments less retirements during the period from July 1, 1919, to February 29, 1920, and the amount of $1,432 heretofore shown to be the average net cost of property added during the 10 months, March to December, inclusive, 1920.

This method produces for the calendar year 1921 as the value of the property devoted by the carrier to common-carrier service, for the purpose of this proceeding, $875,360 This amount is composed of the sum of $856,065, the value for the 10 months ended December 31, 1920, plus $9,327, which is the difference between the average net costs of property added during these 10 months and the total amount thereof which remained as an investment in the property on December 31, 1920, and plus the amount of $9,968 heretofore shown to be the average net cost of property added during the year 1921.

By the same method the value of the property, for purposes of this proceeding, for the year 1922 was $978,874, and for the year 1923 was $978,246.

It was stipulated at the hearing that the amount of net railway operating income of the carrier for each of these periods might be entered in the record when determined and agreed upon by our bureau of accounts and the carriers. Such agreement has been reached and the following amounts entered in the record, with the carrier's approval, stated to be the amounts of net railway operating income of the carrier: For the period March to December, inclusive, 1920, $147,519.89; for the year ended December 31, 1921, $182,726.73; for the year ended December 31, 1922, $165,123.47; for the year ended December 31, 1923, $147,653.98. The net income for the year 1923 as agreed upon must be modified by the addition of the amounts previously referred to as being excessive and improper charges to operating expenses during the year. These charges amounted to $21,450, and this sum added to the $147,653.98 agreed upon results in $169,103.98, which sum is found to be the net railway operating income of the O'Fallon for the year ended December 31, 1923, for the purposes of this proceeding.

We find that the values of the property of the O'Fallon, and the net railway operating income of said carrier, for the period March to December, inclusive, 1920, and for the years 1921, 1922, and 1923, determined for the purposes of the recapture provision of section 15a of the interstate commerce act are as stated herein.

We further find that the excess income of the O'Fallon subject to recapture during the periods stated, computed on the basis of the valuations and net railway operating income heretofore found, are as follows: For the period March to December, inclusive, 1920, $106,755.96; for the year 1921, $130,205.13; for the year 1922, $106,391.03; for the year 1923, $110,409.22. Of this excess, one-half, or for the period March to December, inclusive, 1920, $53,377.98; for the year 1921, $65,102.56; for the year 1922, $53,195.51; and for the year 1923, $55,204.61, should be paid to the United States and the remaining one-half placed in a reserve fund by the O'Fallon to the extent required by the provisions of section 15a of the interstate commerce act.

On March 28, 1924, Division 4 announced that "interest on amounts of excess railway operating income payable to the United States under the provisions of section 15a will be required at the rate of 6 per cent per annum, beginning four months after the termination of the period for which the said excess income is computed."

Value and Income of the Manufacturers'

The record made at the hearing regarding the value of the property of the Manufacturers' is of the same character as that regarding the value of the property of the O'Fallon.

It is evident from examination of the evidence relating to the value of the property of the Manufacturers' and the net railway operating income for the periods stated that it is not necessary, for the purposes of this proceeding, for us to reach a conclusion as to the value of this property for any of the recapture periods.

This investigation indicates conclusively, and we so find, that no excess income was received by the Manufacturers' for any of the recapture periods here under consideration.

An appropriate order will be entered.

Commissioner Eastman Concurs

EASTMAN, *Commissioner*, concurring:

I concur in the results reached in this case. They are, I believe, somewhat too favorable to the carriers, but not to an extent which warrants dissent. I also concur in most of what is said in support of the results. On some points I am not in accord

with all that is said, but before indicating these points certain matters suggested by the dissenting opinions invite comment.

It is said that the report and the conclusions reached therein disregard the law as laid down by the Supreme Court. I do not believe that this is fairly descriptive of the situation. The court, as I read its decisions, has very wisely avoided a crystallization of the law with respect to the limits set by the Constitution to the public regulation of undertakings affected with a public interest. There is no controlling decision under the statute which here governs our action, nor any other decision which can fairly be regarded as conclusive of the vital issue in this case. But let us assume for the sake of argument that there is the apparent disregard which is alleged. Where does our duty lie?

The Supreme Court is the final authority upon the law, but what it decides in one case to be the law may with further light and under certain conditions be superseded in a subsequent case by a modified or different conclusion. This is particularly true where the fundamental issue is one of public policy, and it is preeminently true where it can be shown that the public welfare is gravely imperiled.

Where public policy is the issue, law is not a matter of dogmas nor should reasoning be confined to deductions from past judicial utterances. The vital thing is the essential purpose of the law in its relation to the public interest. The report herein seeks to go to this heart of the matter. So important is this point that I shall venture to amplify and emphasize its discussion.

Commission Should Assist the Court with Its Knowledge

In determining such questions knowledge of pertinent facts and an experience which makes it possible to visualize the probable results of a particular public policy are quite as important as familiarity with the law books. It is an instance in which the law is influenced if not governed by the facts. When, therefore, the question relates to the constitutional limits of the public regulation of railroads, an intimate knowledge of railroads, of their relations with and their importance to the shipping and investing classes and to the public generally, and of their past history and future prospects becomes of the highest consequence. Such knowledge it is the peculiar duty of this commission to acquire. As to such matters it occupies a daily front seat upon the stage, while the Supreme Court of necessity is only an occasional visitor in the balcony. Whether the commission has the ability to make the best use of its opportunities for knowledge may be open to debate, but at least it must proceed upon that assumption.

I can not avoid the conclusion that the commission would be derelict in its duty in this case if it should confine its attention, so far as the fundamental law is concerned, to past utterances of the court in more or less analogous cases and should neglect the illumination which is thrown upon the law by its own intimate knowledge of transportation affairs and problems. I feel sure that the Supreme Court is itself desirous that we should speak both frankly and fully on these matters. *United States* v. *Los Angeles & Salt Lake R. R. Co.*, decided February 21, 1927, may perhaps be deemed an invitation to that effect. After the court has heard what we have to say it may decide that our conclusions as to the fundamental law are erroneous, and that will end the matter; but certainly we ought not to deprive the court of the help which it may gain from the special knowledge which it is our duty under the law to acquire. The report in this case seeks to impart this knowledge, so far as it seems pertinent, respectfully but candidly.

This brings me to a consideration of the concept "fair value for rate-making purposes." In *San Pedro, Los Angeles & Salt Lake R. R. Co.*, 75 I. C. C. 463, 523-567, I discussed this matter at great length. Here I shall only comment briefly on certain aspects which seem to merit emphasis at this time. The "fair-value" rule originated in *Smyth* v. *Ames* in an endeavor to fix the limit beyond which public regulation could not justly go. It may fairly be said, and I think will be conceded by most critics, that the Supreme Court was guilty of confusion of thought in that case, particularly in the use of the word "value." Obviously the market value of a property is dependent largely upon its earning power, present and prospective, and can not be used as a basis for determining what that earning power shall be. It follows that "fair value for rate-making purposes" is not "value" in the ordinary sense of the word. A definition was attempted in *Smyth* v. *Ames*, but it was a mere enumeration of "matters for consideration * * * to be given such weight as may be just and right in each case." Vastly different results are possible from such "consideration" dependent upon ideas as to what is "just and right."

With cost of reproduction now exceeding original cost in most cases by anywhere from 50 to 80 per cent, it is clear that a method of determining value for rate-making purposes which leaves to unguided judgment the weight to be given such widely divergent factors can not produce satisfactory results and must be made more definite. That the Supreme Court has not yet reached firm ground may be gathered from a comparison of *McCardle* v. *Indianapolis Water Co.*, decided November 22, 1926, with *Georgia Ry. & Power Co.* v. *R. R. Comm.*, 262 U. S. 625; from the fact that Justice Brandeis, while advocating in a separate opinion in *S. W. Tel. Co.* v. *Pub. Serv. Comm.*, 262 U. S. 276, 289-312, the adoption of prudent investment as the rate base, was able to concur in the result reached in that case by the majority, and also with the result reached in *Bluefield Co.* v. *Pub. Serv. Comm.*, 262 U. S. 679; and from the fact that Justice Holmes, who concurred in the opinion of Justice Brandeis in *S. W. Tel. Co.* v. *Pub. Serv. Comm.*, supra, was able to concur in the result reached in *McCardle* v. *Indianapolis Water Co.*, *supra*.

In the escape from the confusion of *Smyth* v. *Ames* the aim of the railroads and utilities is to establish current cost of reproduction of structures plus so-called present value of land minus deferred maintenance as the minimum rate base in all cases. The report here gives our reasons for believing that such a rate base would be nothing short of a public calamity; that it would at the present time be grossly unjust to the public served by the railroads; that it is likely at some future time to be equally unjust to those who have invested their savings in the railroads; that it is without foundation in sound reason; and that it is deficient in both stability and practicability. These reasons are fortified by our observation and experience in Federal regulation of carriers, and in the case of three of those who join in the decision, also by prior observation and experience in State regulation of both railroads and utilities. It is worthy of note that the only dissenting commissioner who has had such experience in State regulation agrees with the majority in their statement of the disastrous economic consequences which are likely to flow from acceptance of the current cost of reproduction doctrine. The report further indicates a method of determining "fair value for rate-making purposes," or rate base, which will produce results just both to users of and to investors in the railroad properties.

I digress at this point to express a firm conviction that acceptance of the current cost of reproduction doctrine would in its ultimate results be disastrous to private operation of railroads and public utilities, not only in periods of low prices but in high-price periods as well. In support of this conviction I quote from a unanimous report recently made by the Department of Public Utilities of Massachusetts to the General Court of that Commonwealth:

> If, under our present statutes, it shall be determined by the United States Supreme Court that the gas and electric companies of this State are entitled, as a matter of law, to charge rates based upon the fair value of their property employed in the public service, and that in ascertaining such value the value of the plant and of the structures and equipment in or upon the public highway is to be taken at the reproduction cost less the then actual depreciation, and that the findings of fact in relation to these values are subject to review in each instance by the Federal court, we are confident that the people of this State will conclude that the regulation of the rates of the gas and electric companies under such conditions is too cumbersome, inefficient and expensive to be tolerated. Such a method of regulating rates will inevitably lead to conflicts between the companies and the public, to the disadvantage of both.
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> Public ownership and operation of electric plants is not an untried experiment in this Commonwealth. There are at the present time over 40 municipal plants in successful operation. In most of the municipalities where these plants are in operation the rates for electricity are lower than the rates of private companies operating in adjacent territory.

In the case of publicly owned utilities not a cent has or will be added to the public burden from past investment by reason of the increase in general price level. In the case of privately owned railroads and utilities the current cost of reproduction doctrine would probably increase the public burden by upwards of $30,000,000,000.

The conclusions of the majority herein are founded upon the principle that no person will be deprived of property rights without due process of law, if the railroads are allowed full opportunity to earn upon a maximum estimate of the money invested in their existing properties such return as will attract further investment of capital. My only objection to the report is that it does not in all respects follow this principle consistently, as I shall attempt a little later on to show.

Cost-of-reproductionists are apparently relying more and more in defense of their doctrine upon the depreciated dollar. The theory is that the rise in prices has come about largely from decrease in the purchasing power of the dollar, and that if the return in dollars which railroad investors receive is not allowed to increase in proportion to this reduced purchasing power there will be a corresponding loss in real, as contrasted with nominal, return. The current cost of reproduction doctrine is urged as an automatic means of adjusting the return to gold dollar purchasing power.

The place to make allowance for the depreciated gold dollar,

if it can be shown that justice requires an allowance, is clearly in the rate of return rather than in the rate base. Adjustments in the rate base on this account, particularly when cost of reproduction and so-called present value of land are used as the measures, are intricate undertakings involving costly research and prolonged judicial proceedings, and in the end the gains or losses are distributed wholly without regard to justice and equity. On the other hand, such adjustments in rate of return as may be necessary to attract capital, for that is the real test and the one which section 15a very properly prescribes, may be made with far less expense and difficulty; and in determining what they shall be full weight may be given to the fact that two-thirds of the outstanding railroad securities are bonds or preferred stock upon which no more than a certain maximum rate of return can in any event be paid.

Lest there be any possible impression that the O'Fallon has been treated harshly in this proceeding, it may be well to indicate what the carrier will have left in the way of income following the recapture for which we have provided. The table below shows for the three full-year recapture periods the net railway operating income which will remain after recapture and the per cent relation of this remaining income to the amount found to be the fair value of the property:

Year	Remaining income	Per cent on fair value
1921	$117,624.17	13.44
1922	111,927.96	11.43
1923	113,899.37	11.64

Bear in mind that the fair value represents a maximum estimate of every dollar that has gone into the property less a probably inadequate deduction for depreciation. The remaining income in each of these years, as shown in the above table, would have permitted, after the accumulation of the reserve fund provided for in section 15a, the payment of interest on all indebtedness and the declaration of dividends on the outstanding stock of 24 per cent in 1921, 21 per cent in 1922, and 23 per cent in 1923. Of the $410,000 of stock oustanding, $260,000 represents the equivalent of a stock dividend declared in 1917. Is this confiscation?

I come now to the points in which I differ with the discussion in the report. As I have stated in the *San Pedro case* and other valuation proceedings, I am wholly persuaded that the best and fairest rate base or "value for rate-making purposes," as well as the simplest and most practicable, is the honest and prudent investment in existing property. So far as structures are concerned, the report in this case adopts much the same principle. The basic value, as of June 30, 1919, is arrived at by estimating cost of reproduction new at 1914 unit prices, allowing for the actual cost of property installed after June 30, 1914, at higher unit prices, deducting a minimum estimate of accrued depreciation, and then adding so-called present value of lands and an allowance for working capital. This method in all probability produces an amount greater than the honest and prudent investment in the property in actual existence on June 30, 1919. In view of the fact that the trend of the price level was on the whole continually upward from about 1896 to 1920, I am not convinced that the use of 1914 unit prices in estimating cost of reproduction will produce a result approximating the reasonable money outlay in the property where much of it was constructed or installed long before 1914. It has seemed to me both preferable and feasible, where records of actual costs are not available, to estimate what the property should reasonably have cost, taking into consideration the dates when the various units came into existence. See *Petition of National Conference on Valuation*, 84 I. C. C. 9, 20-21.

More important, however, is the use of "present value" of lands. Here the report departs from the principle followed in the case of structures and uses, in constructing the rate base, not the actual or approximate money outlay in the lands, but an amount based on the current market value of adjacent lands. Here the consequence of this deviation from principle are not important; but in other cases they may be of vital importance, particularly where railroads have extensive land holdings in the heart of great cities.

Commissioner McManamy joins in this expression.

Minority Report

Hall, *Commissioner*, dissenting:

I am authorized by *Commissioners* Aitchison, Woodlock, and Taylor to state that they join with me in the following expression of dissent:

At the risk of appearing to lack vision we venture the reminder that the function of this commission is not to act as an arbiter in economics, but as an agency of Congress, to apply the law of the land to facts developed of record in matters committed by Congress to our jurisdiction. We may, indeed, in our annual reports to that body recommend needed changes in legislation, but we may not make those changes ourselves. This dissent is from the refusal of the majority to apply that law to the O'Fallon.

In order to determine the value of the O'Fallon property devoted to carrier service during the recapture periods, 10 months in the year 1920 and the years 1921, 1922, and 1923, we start with a valuation or inventory date of June 30, 1919. The units in existence on that date are known. Original cost of the entire property can not be ascertained. As to the man-made units we estimate the cost of reproducing them in their condition on that date and in so doing apply to the units installed prior to June 30, 1914, the unit prices of 1914, representing a fairly consistent price level for the preceding 5 or 10 years. To like units, installed after June 30, 1914, and prior to June 30, 1919, we apply the same prices, but add a sum representing price increases on those units during that period. For the third period, from June 30, 1919, down to each recapture date, we abandon estimate and turn to recorded net cost of additions less retirements. On this composite, made up of estimated value for two periods and ascertained net cost for the third period, the majority base a conclusion as to value at recapture date of the man-made items. Land goes in at its current value as measured by that of neighboring lands.

Without summarizing the other processes, all clearly stated in the majority report, it will be observed that the rate-making value arrived at for the succesive recapture periods, as for example the year 1923, rests upon 1923 market value of lands; costs of other property installed since June 30, 1919; unit prices of 1914, enhanced by allowance for increased cost of units installed during June 30, 1914-1919; and, for the units installed prior to June 30, 1914, constituting by far the major part of the property, unit prices of 1914 without any enhancement whatever. As to this major part of the carrier's property devoted to carrier purposes in 1923 no consideration is given to costs and prices then obtaining or to increase therein since 1914.

The issue presented is, as stated, of profound importance in its effect upon the public welfare and policy. In essence the problem is not novel and frequently has been passed upon by commissions and courts. The only real difficulty or obscurity is as to the value of the property. All other questions are either ministerial in their nature or present simple issues of fact. The determination of value in cases involving the returns from rates has been before commissions and courts almost continually for nearly 30 years and the consensus of authority has evolved certain principles, now well understood, even if many others remain unsettled and uncertain. Among these certain and established principles are (1) that the value is to be ascertained as of the time of the inquiry, and (2) that proper consideration must be given to all relevant facts, including the enhancement of material and labor costs of property as compared with past values or costs.

Nor is there a differentiation in the application of these principles of law between those carriers which fall in the classes embraced in sections 15a and 19a of the act, and what the report terms local utilities. At least one of the utilities considered by the Supreme Court in the recent cases in which the above principles were clearly stated, was in fact a carrier subject to the provisions of section 19a of the act, and which we are valuing under that section. If we are to follow the decisions of the Supreme Court as to telephone companies engaged in an interstate business, it is difficult to find and import any legal warrant in the same act for applying a totally inconsistent basis for other carriers, such as railroads. The Supreme Court has made no such distinction. The leading case on valuation of public service properties, *Smyth* v. *Ames*, 169 U. S. 466, involved only a railroad; and the principles above enunciated, which the majority refuse to follow, have been applied by that court and generally by other courts and commissions to all classes of property charged with a public interest, without distinction, whenever rates have been brought in issue. Principles so generally applied are not to be distinguished so simply as is done by calling some of the utilities involved local. The Supreme Court in *Dayton-Goose Creek Ry.* v. *U. S.*, 263 U. S. 456, sustained the constitutionality of the recapture provisions under which we here act, but neither said nor intimated that in making valuations for recapture purposes we could ignore elements which it has recognized uniformly as essential.

The methods here pursued in determining the value of lands accord with that court's decision in the *Minnesota Rate Cases*, 230 U. S. 352, but, in determining the value of the major part of the other property used by the O'Fallon for carrier purposes, and thus in determining total value, the majority decline to give consideration, in a legal sense, to enhanced costs. In *Smyth* v. *Ames, supra*, the Supreme Court, in speaking of the elements to be considered in determining the value of property used in serving the general public, stated that consideration should be given to "present as compared with the original cost of construction." In the *Minnesota Rate Cases, supra*, the principles of valuation

announced in the *Smyth case* were set forth and reaffirmed. The principal reason given by the Supreme Court for reversing the lower court in *S. W. Tel. Co.* v. *Pub. Serv. Comm.*, 262 U. S. 276, 287, was that the lower court failed to accord "any weight to the greatly enhanced costs of materials, labor, supplies, etc., over those prevailing in 1913, 1914, and 1916." These cases had to do with railroads and a telephone company, common carriers of a type made subject to our jurisdiction. *Bluefield Waterworks & Imp. Co.* v. *Public Service Comm. of West Virginia*, 262 U. S. 679, illustrates the essential character of such consideration in the case of public utilities not subject to our jurisdiction. From first to last, from *Smyth* v. *Ames, supra*, decided in 1898, to *McCardle* v. *Indianapolis Water Co.*, — U. S. —, decided November 22, 1926, "the present as compared with the original cost of construction" has been named, continuously and consistently, in varying forms of expression, as among the relevant facts to all of which proper consideration must be given and to each of which such weight is to be given as may be just and right in each case. The more recent decisions of the Supreme Court seem to require that, as to previously constructed property devoted to public service, the enhanced-cost basis should be given an effectual weight. The principles involved, and the cases which enunciate and discuss them, are familiar, and no useful purpose would be served by detailed analysis.

Weight Should Be Given to Enhanced Costs

It follows that, under the law of the land, in determining the value of the O'Fallon for any of the purposes contemplated by either section 19a or section 15a, the valuation and the recapture provisions of the act which we administer, we must accord weight in the legal sense to the greatly enhanced costs of material, labor, and supplies during the periods of inquiry, here the recapture years, over those prevailing in the pricing period. The majority in according no weight to such evidence disregard highly relevant facts, established by competent testimony and undisputed. They offer no justification except a forecast of unfavorable economic results, an exposition of better results to be anticipated from safeguarding the amount prudently invested in the property rather than the value of the property itself, and a doubt whether the courts, when called upon to construe the valuation and recapture provisions of the interstate commerce act, would still apply the principles of valuation enunciated by the Supreme Court in cases which did not arise under that statute. The election made by the majority is deliberate. They say, "What we do in this case we must in principle do for all the railroads in the United States."

They say this, although our valuation reports, in which final values of property other than land were determined as of one and the same date, June 30, 1914, have indicated that when we came to make use of these values corrective factors would be applied, "as by law required," *Winston-Salem Southbound Railway Co.*, 75 I. C. C. 187, 192, to the 1914 unit prices, so that all parts of the property, land and other, might be kept upon a comparable basis. These corrective factors were to be applied "as the normal trend of prices of labor and material may go upward or downward." *Winston-Salem Southbound Railway Co., supra.* Expressions to like effect appear in the "statement of methods" incorporated as appendix 3 in our first valuation report, *Texas Midland Railroad*, 75 I. C. C. 1, 139-140, decided July 31, 1918, and incorporated by reference in subsequent valuation reports. Since June 12, 1925, our valuation reports have also contained the statement then made in *Manistique & Lake Superior R. R. Co.*, 97 I. C. C. 382, 386, that the discrepancy between 1914 unit prices of carrier structures and values on valuation date of carrier lands will be removed when we adjust to later dates, in accordance with the requirements of the valuation act, the final values therein reported. The values of common-carrier lands have in all cases been based upon the fair average of the normal market value of neighboring lands on the date of valuation, and it was anticipated that all values, land and other, would be brought to a comparable basis as of the date of use, in this case a recapture date, e. g., 1923. While such was the expectation, it was not premised, nor is it to be taken as understood from this expression, that values as of later dates would necessarily reflect in full enhanced costs as shown in subsequent reproduction estimates, but rather that such facts, in connection with all other relevant facts, would then be given due consideration.

The use, as a common starting point, of 1914 unit prices in arriving at 1914 reproduction cost of carrier structures then in service is not here challenged. The dissent is from the use made of them in determining value in 1923 without application of corrective factors or cure of recognized discrepancies in the adjustment of values which we should now make to the later date, the date of inquiry or recapture. In this the departure by the majority from our hitherto-declared purpose is unmistakable. If the majority, while developing with manifest earnestness and sincerity the reasons by which they are persuaded, had nevertheless recognized the constraint of the law thus far declared and reached conclusions in harmony with it, nothing would have been lost in the presentation, and where we were in error the Supreme Court could have set us right. If the law needs change, let those who made it change it. Our duty is to apply the law as it stands.

It will be seen that the divergence between the majority and the minority as to our authority under the law is basic. Other matters of moment are reserved for individual expression.

Commissioner Aitchison Has Separate Dissenting Opinion

AITCHISON, *Commissioner*, dissenting:

I desire to add a few words to the foregoing expression. In much that is stated by the majority as to the effect of the valuation rule contended for by the carriers, I unreservedly concur; and my dissent as expressed by Commissioner HALL on purely legal grounds does not indicate nonconcurrence as to these other important considerations, chiefly economic in their character, so forcefully discussed by the majority. Indeed, as an utterance of mine to the effect that any consideration of value which ignored the original cost of the property was not only legally unsound but was fraught with grave danger to the country was quoted by a committee of the Senate of the United States in its report upon the very bill which became section 19a of the act (62d Cong., 3d sess., Rept. No. 1290, p. 6), it is not inappropriate to add that my personal opinion in this regard has in nowise changed. But this is not the appropriate place to discuss the economic and political results of the enforcement of a rule laid down by the Supreme Court. Our present duty is to ascertain the rule of law and to enforce it. If we anticipate grave results will follow, our responsibility will be fully met if we suggest to the Congress, under our statutory powers to recommend new legislation to that body, the enactment of a rule for rate making under the commerce clause which will have no such unfavorable effects.

Commissioner Woodlock

WOODLOCK, *Commissioner*, dissenting:

With the majority's main arguments of an economic nature I am in fundamental disagreement. The contention that stability of the investment in railroad property is best attainable by irrevocably linking that investment to the dollar seems to me to be, on its face, quite untenable. The dollar is valuable only because of the commodities that it will buy. Its purchasing power is notoriously characterized by great and continuous instability. The investment theory of value urged by the majority equates railroad property with the dollar. The principle of valuation expressed in the decisions of the Supreme Court equates railroad property with all other forms of property. This is the only real and effective stabilization. For the majority's theory to produce effective stabilization of railroad property it would be necessary, first, to stabilize the dollar. This it is which constitutes what I must call the basic unfairness of the majority's proposal to stamp the greater part of railroad property in existence to-day with the dollar relation of 1914, thus saddling perpetually upon the owners of that property the loss inherent in the depreciation of the dollar since that time. The majority seems to anticipate a stabilization of railroad rates and fares to follow application of the investment theory of value to railroad property. Railroad earnings, railroad material, and railroad taxes can not be linked to the dollar; they will change as dollar prices change. It was not a question of railroad property values which brought about the rate changes following 1914, and similar rate adjustments will be necessary when and as similar dollar price changes occur in the future. Real stability in a rate level—which is a dollar relation—can only be achieved through real stabilization of labor and material costs, and for this the dollar must first be stabilized. Furthermore, it seems to me that if any conclusion may fairly be drawn from the fact that capital has been supplied to the railroad industry by investors in the years following 1920, it is the conclusion that in supplying it investors have relied upon the terms of the law, the statements of this commission, and the decisions of the Supreme Court, all of which are now summarily set aside by the majority.

In one respect, however, I can agree with the majority's view of the practical goal of regulation.

The main purpose of regulation of public utility enterprises is to supply to the public that protection in the matter of rates, fares, and service which is supplied in the case of freely competitive—and, therefore, unregulated—enterprises by the force and play of competition. In fully competitive enterprises the rate of return tends at all times to circle around the point where it will just suffice to attract capital into the industry when and as needed. This being so, it follows that railroad rates and fares should, under regulation, be so adjusted that the return offered will tend to be *high enough* to attract the investor's capital—and

no higher. If it be true—and it is true—that value and fair return must be so reciprocally adjusted as to attract capital to the railroad industry, as it is needed, and that rates and fares are to be made just high enough to produce that result, and no higher, why can not that adjustment be made with values found as the Supreme Court indicates that they should be found? The majority lays stress upon the difficulty and inconvenience of ascertaining values according to that method and upon the simplicity and ease of application of the method which it advocates. A thing is not impossible merely because it is difficult, nor is the easiest way necessarily the right way; and if, by the legal method of valuation, value and rate of return can be so reciprocally adjusted as to produce the result described correctly by the majority as the goal of regulation, what becomes of the majority's lurid picture of the distressing consequences which it thinks are inherent in the application of the valuation principles declared by the Supreme Court as the law of the land?

Commissioner Taylor Believes O'Fallon and Manufacturers' Should Be Taken Together

TAYLOR, *Commissioner,* dissenting:

I disagree with the conclusions of the majority that the St. Louis & O'Fallon Railway Company and the Manufacturers' Railway Company were not under common control and management within the meaning of paragraph (6) of section 15a.

The theory upon which consolidations of railroad properties are permitted, under the transportation act, is that in this way an adequate system of transportation for the entire country can best be created. We are directed to see that this shall be done, "so that these systems can employ uniform rates in the movement of competitive traffic and under efficient management earn substantially the same rate of return upon the value of their respective railway properties." Under this mandate, it seems inconsistent and illegal for us to lay the foundation for the recapture of surplus funds from one of these carriers, without permitting their use in the support of a weak member of the same family, owned by the same interests, and operated as part of the same transportation system.

An additional reason why I dissent from the opinion of the majority as to the basis of the valuation which it has determined, is because it is also to be used as a measure for the charge the carrier will be permitted to make for the transportatoin of passengers and freight now and in the future. The law permits that the income which these carriers can lawfully earn shall be sufficient to properly bear the burdens of an adequate system of transportation and a fair return upon the investment. We have no power to limit to the scale of the year 1914 either the current cost of maintenance of these properties or of the transportation of their traffic, which include both labor and material; nor can we reduce the measure of the tax levy imposed upon their property for the recapture period back to the basis of the assessment for the year 1914.

The proportion of labor, material, and taxes for all class I railroads of the United States for the last year for which the record is complete amounted to practically 82 per cent of the total disbursements out of operating revenues for these costs and for interest and dividends.

Since the year 1914 the tremendous increase in the cost of labor and material, which form the body of railroad operating expense, and the additions to tax burdens, have made necessary a weighted advance in the rates for transporting passengers and freight, which has been approved by this commission, of approximately 50 per cent. Without this advance in rates the operation of the railroads of the country could not have continued unless the wage scale and other costs could have been restored to the 1914 basis, which no one can reasonably desire.

An income account of a railroad company should be so adjusted that it can fairly bear the burdens of ownership, as well as operation. As it has been necessary, in the maintenance of an adequate system of transportation, to permit such a large increase in the passenger and freight rates since 1914, necessary to provide for the present-day scale of labor and material included in the operating cost, and the current tax levy, which may be referred to, generally speaking, as the burden of operation, and which represent 82 per cent of the total of these disbursements out of operating revenue, why should we treat in a different manner, or rest upon another basis of value, the 18 per cent of these disbursements out of the same revenue, necessary to bear what may be referred to, generally speaking, as the burden of ownership?

A determination of the value of this property as it exists to-day will not require a further great increase in rates for transportation, because these rates are now adjusted to bear present-day costs of operation and maintenance, and, generally speaking, would need only to be slightly increased to yield 5¾ per cent on present-day cost of reproduction, if that were found to be the fair rate of return under the circumstances. On the other hand, to determine the value of the O'Fallon property upon the 1914 reproduction scale of wages and cost of material would create a basis for depriving the owners of this property, through the recapture provisions of the act, of a fair return upon the current value of their property, now being earned under tariffs approved by this commission as being reasonable and just.

It seems both unreasonable and unjust to arrive at a valuation of the property of these companies upon a cost scale of the year 1914, for the purpose of determining the amount which they should be allowed to earn during the period from March 1, 1920, to December 31, 1923, for which recapture of the excess earnings of the O'Fallon has been ordered. Such a basis is unjust and unreasonable because, during that period, this corporation was required to bear the burden of the cost of both labor and material, as well as taxes, as fixed, not by the scale of wages and material for the year 1914, or of the tax levies of that date, but by these charges, pressing themselves for payment, upon the revenue of the property for the recapture period.

It may be argued that the 1914 scale, if applied to these disbursements, would only have resulted in greater net earnings subject to recapture; this, however, can not be considered in arriving at a fair measure of value, because the valuation figures now being arrived at must become the basis for determining the rate scale in the lean as well as the fat years, and operating cost must be provided for before any railroad company can have net revenue. It may also follow, after proper determination of the issues in this cause, that there will be no excess earnings subject to recapture.

Senator Norris, of Nebraska, chairman of the National Conference on Valuation of American Railroads, issued a statement referring to the O'Fallon decision as "the most important ever made by the Interstate Commerce Commission," because, if the railroad claims had been sustained, "it would have meant an increase of at least $600,000,000 a year in freight and passenger rates." It constitutes, he said "a splendid victory for the forces represented in the National Conference on Railroad Valuation," which was represented at the argument on this case by its counsel, Donald R. Richberg, who, Senator Norris says, provided the principal brief and argument in support of the tentative report of the commission.

Baggage Car Built by the Bethlehem Steel Company for the Baltimore & Ohio—Length of Body, 70 ft. 9 in., Weight, 133,600 lb.

Chicago Junction Freighthouse No. 6 at Chicago

Merchandise Handling Speeded By Tonnage Bonus System

Chicago Junction increases efficiency of its employees by introducing new methods at freighthouse

THE amount of freight handled at freighthouse No. 6 of the Chicago Junction at Chicago has increased from 42 to 45 tons per day per gang to nearly 70 tons. This has been accomplished by the installation of a bonus system among the platform employees and by the introduction of more efficient methods in freight handling. Greater efficiency has also been obtained by having the bills blocked by a clerk in the office, instead of by the checker on the platform, and by the development of an unusual blocking system, adapted to the needs of this station.

The Chicago Junction serves the stockyards district of Chicago and contiguous areas, including the Central Manufacturing District, in which freighthouse No. 6 is situated. The road operates four freighthouses along its lines, two of which serve outlying districts and are relatively unimportant. Freighthouse No. 1, in the stockyards, handles perishable freight exclusively, and freighthouse No. 6 is the principal shipping and receiving point for l.c.l. freight, other than perishables.

At least one car, and usually more, is dispatched daily from these two houses to each of the railroads entering Chicago, while more than 70 through merchandise cars are operated to points as far away as Cheyenne, Wyo.; Ft. Worth, Tex.; Atlanta, Ga.; New Orleans, La.; Roanoke, Va., and Syracuse, N. Y.

A Modern Building

Freighthouse No. 6 consists of four units and it is centrally located with reference to the rest of the road. Directly south of the freighthouse are the C. J. yards. The building is a six-story structure of concrete construction faced with brick and fireproof throughout. It occupies a total area of 590 by 295 ft., each unit being 125 by 240 ft. The total cubic content of the building is 12,500,000 cu. ft., and the total area of floor space, 870,500 sq. ft.

The five upper floors of the building are leased to the Central Storage & Forwarding Company, which sublets space to various industries for warehouse facilities. The freight station occupies the first floor. A center platform 68 ft. wide runs the entire length of the ground floor, and a freighthouse platform 35 ft. wide extends the entire length of the building. There is a continuous receiving platform on the south side, which is 22 ft. wide.

Four Freight Receiving Methods

Freight is received at this house in four ways, by trap car, by team or truck, by elevator from the warehouse upstairs, and from a freight tunnel operated by the Central Manufacturing District, which runs through the basement of the freighthouse.

An extensive trap car service is maintained, which averages about 75 cars per day from industries on the line. Empty cars for the next day's loading are spotted on the industry tracks each night and the loaded cars are pulled and spotted on the trap-car tracks at the freighthouse early the next morning. Four tracks with a total capacity of 62 cars are available for this purpose.

Each trap car shipper has a "bill-box" on his shipping platform, where the bills of lading are deposited as the shipments are loaded into the trap cars. Each night a mail clerk makes the rounds of these bill-boxes in an automobile, collecting the bills of lading and bringing

them to the foreman's office on the platform. Two of the office force report at six each morning and start work on "blocking" the bills for the freight handling crews,—marking on the bills the block number of the car into which the shipment is to be transferred for outbound movement. They remain on the job until 7:30 when the regular force arrives and, by that time, enough bills have been "blocked" to permit the platform crews to go to work. This is in direct contrast with the more usual practice of having the checker of the platform crew do the blocking, but it has been found far more efficient to have this blocking done by clerks in a warm office with ample references readily available than to delegate the duty to the checker out in the open on the platform.

The amount of freight teamed to this station averages more than 100 tons a day. Ample receiving space is provided on the platforms, a varying number of 22-ft. bays being used for this purpose, depending upon the amount of business being teamed. The teamsters bring their bills of lading to the foreman's office, which is situated near the receiving bays, where they are checked and receipted. They are then blocked and passed out to the checker on the platform.

Freight coming from the 12 industries which lease storage space in the warehouse upstairs averages about 100 tons per day, principally from four large industries. This freight is delivered in the center of the platform by electric elevator, the bilsl for lading being brought down to the office by messengers a few minutes in advance of the shipments so that the bills may be blocked and ready for the checker when the freight reaches the platform.

A freight tunnel, 8 ft. high by 16 ft. wide, operated by the Central Manufacturing District, extends from Ashland avenue to Western avenue, about a mile. It passes at the rear of a large number of industries, with connecting branches into the basements of their buildings and is used for the interchange of freight among the plants as well as for delivery to the freighthouse. The tunnel passes directly beneath the freighthouse platform. Mercury electric trucks and trailers are operated in the tunnel, bringing all freight to an electric elevator, which carries it up to the platform. Bills of lading accompany the freight in each instance and are handled in a manner similar to that described previously.

Thus, regardless of the way the freight arrives at the house, bills are ready shortly after its arrival and the work of placing the freight in the outbound cars can be begun without delay.

The Platform Force

The foreman's office on the platform employs a regular force of six clerks, consisting of one revising clerk, one comptometer operator, one timekeeper, one stripper, one bill stamper and one discrepancy clerk. In addition, two men strip and revise bills from 6 to 7:30 o'clock in the morning and then take up other work in the agent's office upstairs.

Depending upon the amount of business to be handled, 12 to 18 crews are employed on the platform itself. Each crew consists of one checker, one caller and two truckers. The checker is provided with copies of the bills of lading already blocked, so that it is a matter of but a moment to send the freight to its proper outbound cars after the caller has given the nature of the shipment. Most of the freight is trucked by hand from the various places of delivery to the cars in which it belongs, but where hauls of more than 250 ft. are necessary a Mercury electric truck is used.

When the freight has been started on its way to the cars in which it will leave, the checker returns the bills to the foreman's office, where they are reviewed by a revising clerk, who checks the work of the platform gang for errors. If correct, the bills are taken to the agent's office upstairs for abstracting.

The Bonus System

The platform gangs work under a bonus system which has made it possible to leave direction, supervision and disciplining to the men themselves. Before the eight-hour day was known in freight station work, the handling of 40 tons a day per crew was considered a fair day's work at this station. The eight-hour day did not have

The Longer Hauls Are Made with Electric Trucks

the effect of reducing this, at least on the C. J. Instead, after the eight-hour day had been effective for some time, it was found that the men were averaging 42 to 43 tons per day, despite the decrease in their working hours. Officers of the C. J. felt, however, that this figure was still far from the maximum possible and not comparable to what the men could do if given a sufficient incentive. Accordingly, two years ago, after many conferences, it was decided to pay a tonnage bonus to supply this incentive. Fifty tons per eight-hour day was set as a reasonable basis and it was agreed that a bonus would be paid on all tonnage handled over that figure with a guaranteed minimum wage. For the first few months, it was necessary to pay this guarantee in a number of instances, but after that, guarantee payments dwindled rapidly and now they do not run over two or three dollars a month, and frequently no guarantee payment is necessary.

As the system has been worked out, little supervision and direction of the platform force has been necessary and little discipline is applied, for the men themselves take care of that. The C. J. is fortunate in that it is able to draw most of its platform employees from men living in the immediate vicinity of its station, with the result that the organization is far more permanent than would otherwise be the case.

The bonus system has caused the men to take a great interest in their work. They build and apply nose racks for their trucks to increase their handling capacity. They plan to save steps wherever possible and on their own initiative they study the lay-out of the freighthouse closely, so that the freight may be handled more efficiently and rapidly.

Under the layout of this station, it is easier to handle large tonnages of the freight that is teamed in than any of the other freight. Accordingly, the checker and his gang who have the "door," as the team track delivery is

called, are able to earn more money with the same effort than the rest. To offset this and other inequalities due to the difference in effort involved in handling the various classes of freight, the gangs are rotated and each checker and his gang spend one day on each job on the platform. Thus, with 12 gangs working each gang gets its turn at the "door" once every two weeks.

The Blocking System

An unusual procedure for "blocking" cars has been installed. The usual method for "blocking" cars (numbering them to enable a trucker to find the right car), is to number the car by its location on the outgoing tracks rather than by its destination. In some freight stations this works out efficiently. It has the advantage of always enabling a trucker to know in what position he will find the car for which the freight is intended. On the other hand, it multiplies and complicates the checker's work very materially. It is manifestly impossible for the set-up of the outgoing tracks to be the same daily and a certain amount of confusion is almost sure to follow, with freight being loaded in the wrong cars.

At this freighthouse, at least, it has been found more efficient to number the cars according to destination. There are five outgoing tracks and the switchmen are provided with the proper set-up, to be followed as closely as possible each day. It is inevitable, however, that this set-up must be changed more or less to avoid excessive switching. In actual practice, it has been found that the trucker soon learns the three or four changes that it has been necessary to make. The relative merits of the two systems are that the usual practice makes the trucker's work easier, while the C. J. system makes the checker's work easier. Under conditons existing at freighthouse 6, the latter is much to be preferred, particularly since the truckers become acquainted with the revised line-up after the first few trips each morning.

The Stevedores Are Also Paid a Bonus

There are five outgoing tracks and outbound freight is loaded through five cars. A force of from 15 to 20 stevedores is employed to stow the freight and check it to see that it is in the proper car. They are also paid under the bonus system, except that in their case it was impracticable to divide the bonus according to the amount of tonnage handled. The amount of freight handled by a stevedore is dependent entirely upon the amount of freight brought to him by the truckers. Accordingly, depending upon the amount of freight handled, a bonus is given to the entire force of stevedores and divided equally among them. As with the platform crew, the stevedores form practically a self-governing body and, as such, need very little supervision at any time.

Cars Are Pulled at Noon and Night

The inbound trap-car tracks are pulled at noon and the trap-cars that have been held out in the morning because of lack of space are spotted during the noon period. Outbound merchandise cars are also pulled at noon to meet fast schedules, while cars destined to the various city freighthouses for other railroads are not pulled until evening. If, as frequently happens, one or more of the cars is filled before the end of the day, a suitable empty on the trap-car tracks is assigned to receive the overflow, and each night there are usually several of these overflow cars on the trap car tracks. They are pulled at the same time as the outbound tracks and taken to destination with the other cars for the same freighthouse. To eliminate confusion in blocking, these overflow cars are numbered the same as the original car, with an additional number for further identification. For instance, if the car going to the Santa Fe freighthouse carries number 638, the overflow car for the same destination is numbered 638-1.

Inbound Freighthouse

The north platform at freighthouse No. 6 (the only house where inbound l.c.l. freight may be received) and the north track are devoted to an inbound freighthouse. This service was established in 1924 and all eastern lines now avail themselves of it. It affords to inbound l.c.l. freight shipments arriving via eastern trunk lines the equivalent of an open terminal, so that freight from outside points destined to the Chicago district may be concentrated in destination cars and given some advantage in time of transit. Also shipments over various lines arriving for a common consignee may be collected from one station in one pick-up truck, with a resulting saving in time and expense. A free trap-car service for inbound freight amounting to 10,000 lb. or over is maintained from this station for industries on the line of the C. J. and it is well patronized.

Out by Four Means

Inbound freight goes out of the station by the same four means by which outbound freight comes in, that is to say by trap-car, by team, by elevators to the warehouses upstairs and to the freight tunnel downstairs. All freight is taken from the cars spotted during the night and is classified alphabetically in bays assigned for that purpose on the inbound platform.

The driveways leading to both the inbound and outbound platforms are broad and well paved, affording ample room so that congestion can be avoided. The presence of both inbound and outbound stations at this freighthuse makes it possible for shippers to effect a distinct saving, in a number of instances, by having the same trucks that deliver outbound freight pick up inbound freight. The roadways are arranged to facilitate this operation.

Wide World

The B. & O.'s "President Washington" on View in Baltimore

This locomotive, the first of 20 named and specially decorated, attracted thousands of visitors on March 27-28 when it was placed on display.

Delaware, Lackawanna & Western

After distribution of bonds to new securities company will have 44 million surplus and earn 16 per cent on stock

THE Lackawanna's distribution to its stockholders of the shares of a new company having $92,000,000 of assets is this prosperous railroad's latest attempt to retire from the banking business. The Lackawanna succeeded after several attempts in retiring from the coal business, each attempt resulting in great profit to the stockholders. It has now made several attempts to retire from the banking business in similar manner but its earnings from railroad operations or resulting from its disposition of the coal properties have been so large that while the several attempts have put large sums in the pockets of the stockholders, the attempts otherwise have been unsuccessful

Presumably, what the Lackawanna management chiefly desires to do is to become solely a railroad company. This would be requisite from the view point of consolidations. As matters have stood in the past, the

The Delaware, Lackawanna & Western

Lackawanna has had such a large amount of assets and earning power as to make the price of its stock prohibitively high for purchase by some large system or for exchange. Nor does it appear that the Lackawanna has had visions of ever becoming a parent company in a consolidation grouping of its own.

The present plan calls for the organization of a new company to be known as the Lackawanna Securities Company. This new company will issue 844,411 shares of stock without par value which will be distributed to the railroad company stockholders on the basis of one share of Securities Company stock for two shares of railroad stock. To this new company will be transferred $92,006,000 par value of bonds at present held in the company's treasury as follows:

	Par Value	Interest
Morris & Essex first 3½'s of 2000	$9,871,000	$345,485
Glen Alden 4's, payable $1,500,000 per year	58,500,000	2,340,000
Morris & Essex Construction Mortgage 5's of 1955	10,000,000	500,000
New York, Lackawanna & Western first and refunding 5's of 1973, series A	13,635,000	681,750
Total	$92,006,000	$3,867,235

The assets of the new company will equal $108 par value per share of the new Lackawanna Securities Company no par value stock. The annual return in the form of interest will total $4.58 per share. Assuming that the 1½ million per year on the Glen Alden mortgage is distributed to the stockholders of the Lackawanna Securities Company as a liquidating dividend, it will amount to $1.77 a share yearly additional. The stock of the new company is already being bought and sold on the New York Curb Exchange at prices approximating 90.

Will Still Have 44 Million Surplus

Before proceeding to explain how the Lackawanna happens to have had these bonds in its treasury it would be well to study the effect of their distribution on the railroad company. First, the Lackawanna as of December 31, 1926, had a profit and loss surplus of $136,034,252. Included on the assets side of the balance sheet will be noted under the heading of "Other Investments" $96,873,870 of stocks and bonds, including some government securities, the bonds which it is proposed to transfer and some other stocks and bonds of subsidiary companies which are also controlled by lease. The result of the transfer of the 92 million dollar par value to the new company will be to reduce these items to about 4½ millions and to reduce the Company's corporate surplus to 44 million which the company believes sufficient to protect its future credit.

In 1926, the company had net income totaling $17,913,201 which was equivalent to $10.52 per share or 21.04 per cent on the $50 par value railroad stock. For the past three years the company has paid regular dividends of 12 per cent annually plus extras of 2 per cent aggregating 14 per cent or $7 per share. To have eliminated the proceeds in the form of interest on the 92 million dollars—totaling as shown in the table $3,867,235—would have reduced the 1926 net income to approximately $14,000,000 or 16 per cent on the outstanding stock. The 14 per cent dividends total $11,821,754. This means that in 1926 at least, even with the proceeds of the bonds which it is proposed to transfer eliminated, the 14 per cent dividends would have been earned with a margin of over $2,000,000.

Large Proportion of Mileage Controlled by Lease

The Lackawanna has a somewhat peculiar corporation structure. Thus, while it operates 983 miles of railroad, the parent company owns outright only its lines in Pennsylvania totaling 235 miles, all the rest of its mileage except a small amount of trackage rights, being leased. More explicitly the leased mileage totals 733 owned by no less than 18 companies. However, in the case of a few of the less important of these leased lines, the Lackawanna also owns all or nearly all of the outstanding stock. In the case of two of the more important leased lines—the Morris & Essex which owns the better part of the mileage in New Jersey, and the New York, Lackawanna & Western which owns the mileage from Binghamton to Buffalo—the Lackawanna also owns large amounts of bonds taken from time to time in payment for advances. These have been on account of retirement of underlying matured bonds, and expenditures for additions and betterments and represent approximately 33 million of the bonds that the road now proposes to turn over to the Lackawanna Securities Company.

One of the distinctive features of the Lackawanna capital structure is that the parent company has no funded debt. Its fixed interest charges for the past several years have totaled only $6,000. On the other hand, the company has a fixed charge of about 7 million dollars in the form of rent for leased roads—a part of which it gets back in the form of dividends on the stock or interest on the bonds which it owns of the subsidiary companies.

History

The Lackawanna has had a peculiarly interesting history. Such is well studied in connection with the Delaware & Hudson which, operating mines in the same territory, built a gravity railroad and a canal to carry coal to New York. The Lackawanna originally was built to carry coal from the mines north to the Erie Canal and later to Lake Erie. After a time it extended east and in doing so proved a more economical transportation facility than the Delaware & Hudson Canal. The Delaware & Hudson eventually extended north to its present territory centering on Albany, abandoned its canal and it is now the Lackawanna that brings the coal to tide-water instead of its neighbor. The story of the Lackawanna was well detailed in the Interstate Commerce Commission's decision in 1921 permitting the Lackawanna to issue a 100 per cent stock dividend:

"The applicant is a Pennsylvania corporation, which had its genesis in the Liggetts Gap Railroad Company, organized by a special act in 1832, to build and operate a railroad from what is now Scranton, Pa., northward to the New York state line. The original charter contemplated a toll road open to the public for hauling by wagons and other conveyances. A later act permitted it to furnish 'the exclusive motive power,' and it eventually gained authority to acquire and operate other railroads within or without Pennsylvania, to acquire and hold coal lands, and to mine, purchase, and sell coal. The laws of New York authorized it to acquire and operate railroads in that state and to hold lands therein for office and terminal purposes; and it has analogous power from New Jersey. The present corporate name was adopted in 1851.

"The original line ran from Scranton to Great Bend, Pa., where it connected with the Erie Railroad. A route was opened to Cayuga Lake and the Erie Canal, by trackage rights over the Erie to Owego, N. Y., and by lease of the Cayuga & Susquehanna Railroad, thence to Ithaca, N. Y. Coal began to move over these routes in 1851. Later a line was built from Scranton to the Delaware River, and the Warren Railroad leased to a connection with the Central Railroad of New Jersey; and in 1868 applicant, by lease of the Morris & Essex Railroad in New Jersey, secured its own through line to New York Harbor. A year or two later, by construction of the Valley Railroad between Great Bend and Binghamton, N. Y., and by lease of the Syracuse, Binghamton & New York Railroad and the Utica, Chenango & Susquehanna Valley Railroad, it opened routes to Oswego, on Lake Ontario, and to Utica, N. Y. In 1873, by merger with the Lackawanna & Bloomsburg Railroad, it gained a connection with the Pennsylvania Railroad at Northumberland, Pa., and finally, in 1883, Buffalo, N. Y., and Lake Erie were reached by completion and lease of the New York, Lackawanna & Western. Other branch lines of lesser importance have been built or acquired.

"Since its organization [to August 31, 1921] the applicant has operated in the dual capacity of mining company and carrier. . . . Early development was confined largely to the extension of facilities to broaden the coal market, and applicant states that prior to 1900 it was not properly equipped to handle any freight other than coal. In that year comprehensive improvements were begun to modernize the road and bring it to a high state of efficiency. These included reconstruction of 30 miles of line north of Scranton, and the building of the 'Jersey cut-off' from Portland, Pa., to Hopatcong, N. J., at a cost of over $400,000 per mile. Very large sums have been spent during the last 20 years in carrying out this program of rehabilitation."

Table I—Delaware, Lackawanna & Western. Operating Results, Selected Items, 1916 to 1926

Year	Revenue Ton Miles	Revenue Passenger Miles	Rev. per Ton Mile Cents	Coal Revenues	Mdse Freight Revenues	Passenger Revenues	Total Revenues	Total Operating Expenses	Net Operating Revenues	Net After Taxes	Net Ry. Operating Income
1916...	$5,263,263,000	$548,805,000	0.72	$14,475,244	$23,229,865	$8,674,863	$51,580,899	$31,940,974	$19,639,925	$17,114,593	.....
1917...	5,591,043,000	585,179,000	0.75	17,130,291	24,637,415	9,289,838	57,211,224	37,676,488	19,534,736	16,810,495	$16,971,381
1918...	5,574,774,000	604,648,000	0.90	19,009,846	31,287,554	11,204,813	68,740,076	49,925,685	18,814,392	15,853,906	16,011,656
1919...	4,830,066,000	643,254,000	1.07	19,055,523	32,839,878	12,380,787	71,824,047	56,065,251	15,758,796	12,287,412	11,947,364
1920...	5,166,315,000	698,359,000	1.17	20,228,484	40,132,599	13,868,517	83,340,062	73,898,430	9,441,632	6,079,655	6,104,886
1921...	4,454,206,000	656,098,000	1.43	26,606,299	36,970,445	14,438,161	85,977,815	67,872,058	18,105,757	12,781,395	12,997,084
1922...	3,851,276,000	652,062,000	1.34	14,294,191	37,262,516	13,960,681	74,622,344	63,671,647	10,950,697	6,046,287	6,669,022
1923...	4,852,526,000	667,290,000	1.32	25,151,010	39,085,364	14,185,914	88,236,974	69,467,853	18,769,120	12,751,170	13,442,543
1924...	4,809,172,000	660,826,000	1.32	23,576,425	39,874,878	13,600,454	86,727,184	64,485,909	22,241,275	15,328,663	15,925,962
1925...	4,587,677,000	670,930,000	1.30	17,757,554	42,091,064	13,628,673	83,659,738	62,390,610	21,244,447	14,402,022	14,892,121
1926...	4,964,588,000	666,555,000	1.31	22,711,502	42,456,050	13,338,081	88,804,745	62,377,489	26,427,256	18,746,352	19,331,910

Standard return for operations during federal control has $15,749,477.

Dividend Record

The commission estimated that although the stock outstanding at the time of this decision (1921) was $42,220,000, the actual investment by the stockholders "representing direct sacrifice on their part" had been not in excess of $30,980,950.

The company has paid dividends in nearly every year

Table II—Delaware, Lackawanna & Western. Corporate Income Account, Selected Items, 1916 to 1926

	Income						Deductions from Income				
Year	Net from Railroad	Coal Department Earnings	Depletion of Coal Deposits	Dividend Income	Income from Funded Securities	Total Including Other	Rent for Leased Roads	Interest on Funded Debt	Net Income	Dividends Declared	Balance Corporate Surplus
1916...	$17,114,593	$2,899,309	$2,033,713	$476,937	$237,548	$24,647,158	$5,983,152	$6,156	$17,902,116	$8,444,080	$9,458,036
1917...	16,971,381	4,321,268	2,182,611	399,803	301,420	25,078,699	6,272,191	6,156	17,155,809	9,499,590	7,656,219
1918...	14,174,529	3,626,710	2,125,631	499,916	403,112	22,367,160	6,133,886	6,156	14,292,375	8,444,080	5,848,295
1919...	17,324,424	4,989,682	1,956,616	413,269	362,848	25,879,647	6,126,908	6,156	16,941,756	8,444,455	8,497,301
1920...	3,249,379	6,503,942	2,018,593	386,756	680,250	25,446,520	6,128,996	6,156	16,184,788	8,444,110	7,740,678
1921...	12,781,395	6,626,405	1,648,955	444,065	771,650	26,259,539	5,356,540	6,142	20,263,958	13,510,576	6,753,382
1922...	6,046,287	43,847	.....	453,086	3,611,792	16,848,062	5,273,168	5,914	11,208,465	10,132,932	1,075,533
1923...	12,751,170	418	.....	571,664	3,973,793	19,072,466	5,714,374	5,856	12,881,138	10,132,932	2,748,206
1924...	15,328,663	Def. 164	.....	505,566	4,050,105	21,029,006	5,967,749	5,856	14,668,868	11,821,754	2,847,114
1925...	14,933,998	.....	.....	1,508,662	4,017,898	21,010,552	6,533,523	5,856	14,430,195	11,821,754	2,608,441
1926...	19,331,910	.....	.....	524,882	4,298,836	24,975,714	6,993,306	5,856	17,913,201	11,821,754	6,091,447

since its organization. It paid 7 per cent or $3.50 per share from 1885 to 1903. In 1904 it instituted the practice of paying 10 per cent extras each year and in 1905 increased the regular dividends to 10 per cent, making a total of 20 per cent. In 1909 the dividends totaled 85 per cent, 75 per cent of which was an extra dividend. Included in this was a special dividend of 50 per cent, one-half of which was used by the stockholders to pay for their permissible subscription to stock in the new Delaware, Lackawanna & Western Coal (Sales) Company. Then again in 1911 there was an extra of 45 per cent, 10 per cent in cash and 35 per cent in stock of the Lackawanna Railroad of New Jersey, the line of which, known as the New Jersey cut-off, had just been completed. In 1917 the 10 per cent extra dividends were made regular and the new rate of 20 per cent was continued until 1921. This was the year in which the company issued a 100 per cent stock dividend. The dividend on the increased capitalization was made 12 per cent and since 1924 extras of 2 per cent have also been paid. But even this does not complete the record because shortly after the declaration of the 100 per cent stock dividend in 1921

Table III—1926 Condensed Income Statement

	1926	1925	Increase or Decrease
Mileage operated	990	983	7
Railway Operating Revenues	88,804,745	83,635,056	5,169,689
Maintenance of way	8,581,206	8,331,770	249,435
Maintenance of equipment	16,342,981	17,262,144	—919,162
Transportation	33,095,084	32,707,387	387,697
Total Operating Expenses	62,377,489	62,390,607	—13,120
Operating ratio	70.24	74.60	
Net Revenue from Operations	26,427,256	21,244,447	5,182,809
Railway tax accruals	7,671,404	6,832,653	838,751
Railway operating income	18,746,352	14,402,022	4,344,331
Equipment rents, net cr.	448,729	338,174	60,555
Joint facility rents, net cr.	136,829	143,803	—6,974
Net Railway Operating Income	19,331,910	14,933,998	4,397,911
Non-operating income	5,643,804	6,076,553	—432,749
Gross Income	24,975,714	21,010,552	3,965,162
Rent for leased roads	6,993,306	6,553,523	459,783
Interest on funded debt	5,856	5,856	
Total Deductions from Gross Income	7,062,513	6,580,357	482,156
Net Income	17,913,201	14,430,195	3,483,006
Dividends	11,821,754	11,821,754	
Investment in physical prop.	692,196	914,876	—222,680
Surplus for year carried to profit and loss	5,399,251	1,693,564	3,705,687

stockholders approved segregation of the coal properties by transfer to a new company known as the Glen Alden Coal Company. The Delaware, Lackawanna & Western Coal Company, mentioned above as organized in 1909 had been only a sales company which acquired the coal at the still railroad owned mines, transported it and sold it in the markets. The Glen Alden Coal Company on the other hand is an operating company. Its stock totaling 850,000 shares without par value was offered to Railroad Company stockholders share for share at $5. The Glen Alden Company has since acquired the Delaware, Lackawanna & Western Coal Company and its stock is today selling on the New York Curb at about 160. It pays dividends of $10 a share.

Glen Alden Coal Company

The railroad company turned over to the Glen Alden Company its coal operations and unmined coal estimated to total 400,000,000 tons. These operations are said to be the most economical in the anthracite field. They were sufficiently economical at least so that they yielded the Lackawanna about 4 million annually and in 1920 and sinking fund of $1,500,000 annually to retire the mortgage beginning in 1926. This is the big portion of the bonds contained in the transfer to the new Lackawanna Securities Company.

Summarizing this record it is found that since, but not including, 1900, the Lackawanna, has paid out in dividends a total of $213,224,727 in cash. It has given its stockholders the entire stock of one company gratis, namely, the stock of the Lackawanna Railroad of New Jersey. In addition, the railroad sold to its stockholders the stock of the Delaware, Lackawanna & Western Coal Company but at the same time gave the stockholders the money to buy it with. Then it also sold to them the stock of the Glen Alden Coal Company which took over some of the most economically operated mines in the anthracite industry—for $5 a share. And now it proposes to add a fourth company to be given to the stockholders without cost, namely, the Lackawanna Securities Company. The present market value of these four companies, now become three since the merger of the two coal companies, is $270,000,000 and the remarkable thing about it is that the railroad company will still have a surplus of $44,000,000 and would on the basis of 1926 earnings be able to report net income of 16 per cent on its stock.

It is apparent that no inconsiderable share of the Lackawanna's prosperity has come from its former coal operations. The railroad itself, however, does not lack prosperity which, of course, results from the large expenditures in former years for capital improvement effecting more economical operation. The road happens to be in the recapture class, although, of course, that depends upon what the United States Supreme Court will do in the St. Louis & O'Fallon recapture case. It was in this class in 1924, because in that year it earned on the basis of pre-war values 6.2 per cent on its investment. Net operating income in 1925 was less than in 1924 due to the coal strike and was below the 6 per cent. In 1926, the road's rate of return was 7 per cent. It is not likely that the Lackawanna stockholders can look forward to the advantages that the road has had in the past while it still owned equities of one kind and another in the anthracite coal business but they will still own a very prosperous and well-operated railroad.

Will the I. C. C. Approve?

A question remains as to whether the Interstate Commerce Commission will permit the transfer of bonds as the present plan for the formation of the Lackawanna Securities Company entails. It is on record with respect to this point in its decision in the 100 per cent stock dividend case of 1921 in which it said:

"Several items of the remaining $88,255,788 of the surplus do not fall within that class of assets which we deem it proper to permit the applicant to capitalize. On May 31, 1920, it held in its treasury stocks of railroad, terminal, transfer, and ferry companies to the amount of $9,151,049, and bonds of such companies to the amount of $15,672,997, making a total of $24,824,046. Of this amount, $56,450 was applicant's own stock. The balance consisted mainly of stocks and bonds of lines leased by the applicant. The record discloses no intercorporate relations or other circumstances which bring these holdings within the sphere of securities which could properly be capitalized by a common carrier. It is not necessary for the applicant to hold securities of its leased lines in order to operate its system if, as it states, its leases are in perpetuity. . . . The applicant on that date also held in its treasury stocks of advertising, mining, timber, and land companies to the amount of $1,662,813, and United States government bonds and certificates of indebtedness, municipal bonds, and steel company bonds to the amount of $12,566,772, making a total of $14,229,585. These are flexible assets which we deem it improper to permit applicant to capitalize. If it should be thought desirable to distribute the portion of surplus invested in such securities among the stockholders, the applicant would be able to apportion the securities themselves or distribute the proceeds

thereof. They are neither property used or useful in rendering the public service, nor an assured part of any surplus."

Earnings in 1926

The Lackawanna reported in 1926 the best year since the war, which result was secured even though the revenue ton-miles were less than in such busy years as 1916, 1917, 1918 or 1920. The traffic would have been larger but for two months of coal strike. The anthracite strike which began September 1, 1925, continued to about February 17, 1926, but the movement of coal did not commence until about March 1. It will be of interest in this connection that the revenues from coal traffic in 1926 were 9.7 per cent less than in 1923 but that the revenues from merchandise freight were 6.5 per cent greater and the largest in the company's history. The 1926 net railway operating income of $19,331,910 compared with $14,933,998 in 1925 and with $15,925,962 in 1924.

Improvement Program

Another notable feature about Lackawanna is the large improvement program it seems continually to have under way. Net charges for additions and betterments in 1925 total $12,000,000 and in 1926, $8,000,000, thus totaling in two years $11.50 a share on the outstanding capital stock. Important improvements now under way or recently completed include a new cut-off from Kingsland, N. J., to Harrison, 8 miles, a new short but expensive extension and construction of a freight house in connection with the new Vehicular Tunnel at Jersey City, N. J.; four-tracking of the line through Boonton; elimination of grade crossing at Paterson, N. J., and Passaic; automatic train control from Buffalo, N. Y., to Elmira, now being extended to Scranton, Pa.; important new bridges across the Hackensack river on the Newark and Morristown suburban line and across the Susquehanna river at Owego, N. Y., on the Ithaca branch; the replacement of the present 105 lb. rail in main line with rail of 118 and 130 lb. section, etc. Of the replacements of rail in 1926 totaling 17,924 tons, 13,541 was of the new 130 lb. weight and most of the remainder was 105. These details are further evidence that even after the distribution of the equities in the coal properties, the Lackawanna remains an extremely prosperous property, particularly when it is realized that the improvements are being carried out without the sale of stock, bonds or even equipment trust certificates.

Drawing Room and Compartment En Suite on the C. & N. W.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended March 26 was over the million-car mark for the third consecutive week this year, with a total of 1,008,888 cars. This was only a slight increase as compared with the preceding week but an increase of 40,943 cars as compared with the corresponding week of last year and of 76,119 cars as compared with 1925. All districts showed increases as compared with both preceding years except the Northwestern, which showed a decrease as compared with last year. Among the commodity classifications the principal increase was in coal, which showed a total of 35,564 cars more than were loaded in the corresponding week of last year, while miscellaneous freight showed an increase of 14,361 and there were small increases in ore and merchandise. Grain and grain products, livestock, coke and forest products showed decreases. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, March 26, 1927.

Districts	1927	1926	1925
Eastern	238,307	236,971	225,983
Allegheny	210,374	197,366	192,667
Pocahontas	60,543	50,217	41,026
Southern	166,559	160,397	158,968
Northwestern	116,069	117,478	114,789
Central Western	141,466	133,360	134,466
Southwestern	75,570	72,156	64,870
Total Western Districts	333,105	322,994	314,125
Total All Roads	1,008,888	967,945	932,769
Commodities			
Grain and Grain Products	37,365	38,280	35,015
Live Stock	26,918	27,304	26,685
Coal	206,990	171,426	142,149
Coke	12,097	13,283	12,254
Forest Products	70,867	78,129	81,942
Ore	11,267	10,979	12,875
Mdse. L. C. L.	267,445	266,966	262,899
Miscellaneous	375,939	361,578	358,950
March 26	1,008,888	967,945	932,769
March 19	1.006,861	977,018	911,481
March 12	1,005,715	967,425	926,119
March 5	994,931	965,009	932,044
February 26	923,849	912,933	864.096
Cumulative total, 13 weeks	12,365,075	11,982,985	11,782,409

The freight car surplus for the week ended March 22 averaged 252,751 cars, including 71,677 coal cars and 132,177 box cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended March 26 showed a slight gain over the previous week and the increase over the same week last year was 6,322 cars.

	Total for Canada			Cumulative totals to date	
	Mar. 26,	Mar. 19,	Mar. 27,		
Commodities	1927	1927	1926	1927	1926
Grain & Grain Products	7,321	7,469	5,724	100,179	84,720
Live Stock	2,306	2,059	2,304	24,820	24,741
Coal	6,097	6,244	3,045	78,770	56,830
Coke	286	279	356	4,528	5,957
Lumber	3,599	3,419	3,932	36,891	38,743
Pulpwood	5,357	5,551	3,895	68,467	47,380
Pulp and Paper	2,181	2,300	2,542	26,704	31,986
Other Forest Products	3,687	3,345	3,808	41,405	43,496
Ore	1,480	1,383	1,380	16,694	17,172
Merchandise, L. C. L.	17,621	17,328	16,653	192,557	178,337
Miscellaneous	12,905	12,776	12,879	137,606	133,026
Total cars loaded	62,840	62,153	56,518	728,621	662,388
Total cars received from connections	41,218	43,078	42,104	466,065	444,501

Communications and Books

The Cadet System on the Great Western of England

LONDON.

TO THE EDITOR:

I was very interested to read your report of the address delivered by Professor Cunningham before the New York Railway Club on February 18 last on the training of understudies for official positions, in which he proposed that a cadet system be established on the American railways.

It may be of interest to your readers to know that the Great Western Railway in this country has had a scheme in actual operation since 1921 which provides for a four years' course of special training in all branches of the company's business for certain selected men. The only material difference between the scheme outlined by Professor Cunningham and that in operation here, is that candidates for the Great Western scheme must be members of the company's salaried staff, but this of course, does not necessarily preclude university men.

A candidate must have certain educational qualifications gained as a result of study in the evenings at special railway classes, or at one of the universities. Given these qualifications a man has to be specially recommended by his district officer and the chief officer of his department, who certify as to the general capabilities, potentialities and character of the candidate. Those who pass these tests are interviewed by a selection committee, comprising the chief officers of the company under the chairmanship of the general manager, and naturally, competition is keen in view of the fact that only three or four are chosen every year. It is significant to note, however, that quite a fair proportion of those chosen have been drawn from wayside stations and large goods depots.

It is too early to make any observations as to the value and use of the scheme to the company, but as one who has had the privilege of the Great Western Company's training I am quite sure of its inestimable value and education to the individual.

T. H. HOLLINGSWORTH.

Training Future Officers on the London & North Eastern

LONDON.

TO THE EDITOR:

In the *Railway Age* of February 26 Professor W. J. Cunningham outlined an excellent scheme for training understudies to the occupants of responsible posts in the railway service. It is somewhat remarkable that a scheme on almost identical lines is in existence on the London & North Eastern Railway of Great Britain. This company operates over 7,000 miles of line, covering the whole of the east coast of England and Scotland, with branches extending to Liverpool and Glasgow on the west coast. The employees of all grades number about 200,000. The company is the second largest of the four "groups" created by the Railways Act of 1921 and includes the old North Eastern Railway. In 1907 the North Eastern Company felt that there was a dearth of capable young men training on for its higher posts and instituted a system of "traffic apprenticeships" with the object of giving special opportunities for instruction and advancement to a select band of promising juniors. The system worked so well that on the amalgamation of railways in 1923 it was extended to the whole of the London & North Eastern undertaking. It is administered by a special committee known as the "traffic apprentices selection and training committee," which is composed of representatives of the three divisions into which the railway is divided for administrative purposes. This committee is presided over by the assistant general manager and reports regularly to the chief general manager. It has the assistance in each division of an "education committee" which supervises the training of the apprentices allotted to that area.

Traffic apprentices fall into two groups. First a limited number of young men from public schools and universities are chosen on the strength of their school and college records. The "selection and training committee" interviews the whole of the applicants and considers their testimonials, giving weight not only to scholastic attainments but to appearance, manner and personality.

Much importance is attached to recommendations from the appointments boards which are engaged in finding employment for graduates from Cambridge, Oxford and the provincial universities. Every appointment is made on trial and it is open to the company or to the apprentice to terminate the engagement at any time. At present the selection committee is setting a very high standard. Out of 109 applicants seen during the last four years, only 21 have been appointed. Of the chosen few five have left the service, four are in early stages of their training, but the remaining twelve have proved suitable and are likely to make good railway officers in time.

The second class of apprentices is composed of members of the clerical staff who distinguish themselves in an annual competitive examination, open to candidates between the ages of 18 and 22. The subjects of examination are:

1. Goods and passenger station accounts; block working; general rules and regulations.
2. Railway operating.
3. Railway economics.
4. General paper.
5. Essay.

The examination is conducted throughout by an outside educational authority, who sets and marks the papers. The maximum number of apprentices appointed as the result of each examination is 13 and it is unusual for the full number to qualify. At the last test only 9 candidates were successful.

The whole of the apprentices are paid on the same scale of salary according to age. A youth of nineteen starts at £125 a year, goes to £150 in the second year and rises to £175 in the third year. Again, a young man of twenty-two gets £200 a year for a start and is advanced by increments of £10 per annum. The training ordinarily lasts for three years and an apprentice must obtain a permanent post at the end of his course before he can hope for a further advance of salary. The company reserves the right to discontinue at any time the training of an apprentice who is not giving satisfaction. If an apprentice selected from the staff fails, he simply returns to the ordinary conditions of service in his old grade. Since 1923, 32 members of the staff, out of nearly 900 candidates, have won apprenticeships; three of that number have definitely failed to make good; nine are just beginning their course of training; fourteen have done reasonably well, and six seem likely to go pretty far.

The education committees arrange to give the whole of the apprentices equal opportunities of studying the different branches of operating and commercial work. The young men are moved from one center to another as necessary and are required to submit periodical reports on their work to the chief or district officer under whom they are employed. These reports are considered by the divisional education committees, whose minutes in turn go before the "selection and training committee" at headquarters. These committees also have the whole of the apprentices up for an interview once or twice a year.

The training of the apprentices is arranged as far as possible to fit in with the educational scheme run by the company for the benefit of their traffic staff. This scheme has been elaborated in consultation with eleven universities who are in constant touch with the company concerning its educational arrangements, and covers the following subjects:

1. Railway law.
2. Railway economics.
3. Railway operating.
4. Railway and commercial geography.
5. Train signalling.
6. Passenger accounts.
7. Goods accounts.

Classes on all these subjects are held during the winter months at 21 centers up and down the line. The classes in practical railway work, accounts and signaling, are conducted by members of the company's own staff; the lectures in advanced railway subjects being arranged by the universities. Traffic apprentices are required to take the classes and to do well in the examinations which are held each spring. The standard expected in the advanced railway subjects is as high as the universities set for a "commerce" degree.

At the present time there are fifteen apprentices in their first year of training, six in their second, and thirteen in their third. Fourteen have completed their training, but have not yet been appointed to permanent posts. They are, however, doing useful work which fully justifies their pay. As a rule an apprentice is a supernumerary during his first year, but in the later years he is often able to fill a permanent post in an emergency or to undertake special enquiries. The total cost of the scheme is thus insignificant compared with the advantages it confers by rousing the ambition of the more capable amongst the ordinary rank and file as well as by introducing men of fresh energy and ability from outside the service. It is a complete justification of the scheme that of the apprentices who were appointed between 1907 and 1912, one now holds the post of advertising manager for the whole of the London & North Eastern Railway, and five others fill positions varying in rank from superintendent of a division to assistant district officer. These officers are all between 35 and 42 years of age and their work is of a noticeably high quality. The company looks forward confidently to securing a regular supply of competent officers from the cadets who are enrolled under the "traffic apprenticeships" scheme.

R. BELL,
Assistant General Manager, London & North Eastern.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Coal in 1924, by James E. Black, L. Mann, and F. G. Tryon. Preprint of U.S. Geological Survey's "Mineral Resources of the United States 1924, Part II" p. 459-589, containing statistics and discussions of anthracite and bituminous coal produced, loaded for shipment, etc., in informative detail. Pub. by Govt. Print. Off., Washington, D. C. 20 cents.

The Economic History of Modern Britain—The Early Railway Age 1820-1850, by J. H. Clapham. The first thirty years of Britain's struggle for railroads preceded by a discussion of the economic events that influenced attitudes for or against railways. 623 p. Pub. by Cambridge University Press, Cambridge, England. $8.50.

Periodical Articles

America's Debt to the Hen, by Harry R. Lewis. Eggs, where produced, where marketed and how transported, including some general statistics on carloads per day of poultry products from shipping points. Illustrations include photograph of loaded poultry car, etc. National Geographic Magazine, April 1927, p. 453-467.

Effect of State and Federal Regulation of Public Utilities on Commerce and Engineering, by Charles A. Finley. Problems of physical improvements against what may or may not be discouraging mental attitudes. Aera, April 1927, p. 357-361.

The New Railway Labor Act: A Comparison and an Appraisal, by Clyde Olin Fisher. Provisions of earlier laws outlined to furnish background. American Economic Review, March 1927, p. 177-187.

Rubber and Rails, by Harper Leach. Popular article on relations—traffic and otherwise—between railroads and highway transport via motor vehicles. Liberty, April 2, 1927, p. 67-70.

Savings in Insurance Rates by Use of Approved Materials, by James S. Mahan. "...how the purchases and stores departments may be the means of effecting savings through reductions in fire insurance rates by specifying devices and materials which have either been labeled or listed by Underwriters' Laboratories, Inc." p. 362. Aera, April 1927, p. 362-365.

Looking Backward

Fifty Years Ago

The Western division of the Houston & Texas Central, from Hempstead, Tex., to Austin, 115 miles, was changed from 5 ft. 6 in. to 4 ft. 8½ in. gage on March 27. This does away with the last section of 5 ft. 6 in. gage in Texas.—*Railroad Gazette,* April 6, 1877.

The Philadelphia & Reading has given notice that its enginemen cannot remain in its service as long as they continue their membership in the Brotherhood of Locomotive Engineers. As a concession the railroad had promised to provide a satisfactory substitute for the life insurance and assistance features offered by the Brotherhood.—*Railroad Gazette,* April 6, 1877.

The Master Car Builders' Association at its annual meeting in June at Cleveland will discuss the question of train-brakes for freight cars. The committee in charge has circularized the membership, asking whether a train-brake under the control of the engineer is desirable for freight cars and whether an effective brake can be furnished at a cost not exceeding $25 per car.—*Railway Age,* April 12, 1877.

Twenty-Five Years Ago

Howard Elliott, general manager of the Missouri lines of the Chicago, Burlington & Quincy, has been elected second vice-president. E. J. Pearson, superintendent of the Pacific division of the Northern Pacific, has been appointed assistant general superintendent at St. Paul.—*Railway Gazette,* April 11, 1902.

In a recent interview on the subject of the alleged merger of the Great Northern and the Northern Pacific, Frederick D. Underwood, president of the Erie, is credited with the statement that the hope of railroad prosperity lies in the constantly increasing welfare of the people, and no railroad manager is suicidal enough to pursue a policy contrary to that welfare.—*Railway and Engineering Review,* April 12, 1902.

As a result of the breaking of the will of the late Henry B. Plant by his widow and the consequent eagerness of the heirs to divide the $17,000,000 estate the famous Plant system of railways and steamships has been sold to the Atlantic Coast Line. The immediate railroad purchased is the Savannah, Florida & Western, which represents 1,800 miles of the total of about 2,150 miles of the entire Plant system of railways.—*Railway and Engineering Review,* April 12, 1902.

Ten Years Ago

The Oregon Short Line will send 100 men in its employ to the military training camp at Ft. Douglas, Utah, for a 30-days' training period beginning August 4. The men will be maintained on the company's payroll at full salary during their service in camp.—*Railway Age Gazette,* April 6, 1917.

Ralph Peters, president of the Long Island, has written a letter to employees of the road, pointing out that, in case of war, their duty to the country will require them to stay in their places. He stressed the fact that in war the railroads will be essential to national defense.—*Railway Age Gazette,* April 6, 1917.

Hearings before the Joint Congressional Committee on Interstate Commerce at Washington were temporarily discontinued on March 29 on account of the extra session of Congress. Before adjournment Marcus P. Knowlton, chairman of the board of trustees of the Boston & Maine, explained some of the difficulties experienced in trying to reorganize the Boston & Maine system under the necessity of complying with conflicting state laws, as an illustration of the need for federal incorporation of railroads. In October, 1914, the Boston & Maine operated a system of railroad comprising 25 corporations extending into five states.—*Railway Age Gazette,* April 6, 1917.

Odds and Ends of Railroading

Highly unusual statistics have recently been released by the Southern Pacific. From authentic figures prepared, it develops that 30 babies, including one pair of twins, have been born on S.P. trains in the past 10 years. As might be expected, the Western division leads with 7 babies, who were all anxious to be "Native Sons."

The Rock Island magazine calls attention to an unusual family in Oklahoma. Mr. and Mrs. D. W. Lambert of Red Oak have five sons, all of whom are locomotive enginemen on the Panhandle-Indian Territory division of the Rock Island, and whose combined railroad service is 112 years. The sons are William, age 47; Walter, 45; Arthur, 43; Sam, 39; and Lee, 27.

Safety verses continue to come in. Here's one that should appeal to motorists.

Joe saw the train, but wouldn't stop,
So they dragged his flivver to the shop,
It only took a week or two,
To make his Lizzie good as new,
But though they hunted high and low
They found no extra parts for Joe.

Anyone familiar with telegraphy will realize that the letters "t" and "l" are somewhat difficult to differentiate over the wire An amusing illustration of this fact is clearly shown by the following incident:

An operator at one station sent this message over the wire to another station:

"Foundation under platform in bad condition. Wire instruction."

The receiving operator, mistaking the "t" for an "l" (in the first word) wired back as follows: "Feed the darn thing and notify the public authorities."

Local Color in Railroading

A unique application for permission to build a railroad has been filed with the county clerk of Oktibbeha County, Mississippi. Here it is, make what you can of it:

To the Chancery Court and Citizens of Oktibbeha county, Greeting: We are stockholders for the purpose of conveying and building a railroad for the purpose of running it through your county, from Starkville, Mississippi, to Clarksdale, Mississippi. We petition the court and the citizens of Oktibbeha county, Mississippi, for permission to put this road through, running too and fro, east and west, from Starkville to Clarksdale. We cheerfully guarantee your honorable body to meet all the obligations and all the requirements that is required of us by law and for the good of the citizens in the counties in which this road is to be run through. This railroad company shall be known as the Afro-American Railway Company."

A Railroad Patron of the Classics

E. W. Beatty, president and chairman of the Canadian Pacific, has founded two scholarships of $500 each at McGill University. One of these will be awarded to the man receiving the highest mark in the entrance examinations in Latin and Greek and the other will go to the one rated highest in mathematics. Educators and publicists have been warning us lately of the danger of stressing "practical" courses in our schools to the exclusion of everything else; the classics and mathematics have formed the backbone of higher education too long, they say, to be hastily cast aside. In the words of the Principal of the University, Sir Arthur Currie, "shrill voices are heard, urging that because the ship is now equipped with radio it may throw overboard the boilers." Mr. Beatty's substantial support of the cause of the "boilers," i.e., the classics and mathematics, is bringing him great praise in Canada.

Even wood-burning locomotives sixty-odd years old are not immune from accident in these hurried days, it would seem. Some weeks ago it was decided to move the old wood-burning locomotive "Texas," of Civil War days, from its location in Grant Park in Atlanta to a new and better home in the basement of the cyclorama building where it might spend the remainder of its years free from the wear and tear of the elements. Accordingly, tracks were laid through the park from the locomotive to the cyclorama, and workmen started it off upon its last trip. Because of the condition of its boilers, it was found impossible for the "Texas" to travel under its own steam, so it was patiently moved by block and tackle. Night arrived while the locomotive was in the center of South boulevard where it crosses the park, and workmen had to leave it there. They arranged red lanterns all around it, but they did not deter some speeding motorist from crashing into it! No one was hurt, but the automobile had to be carried to the hospital for repairs. The "Texas," veteran of the war, received scarcely a scar in the encounter, and is today placidly continuing its way to its new home.

The "Oregon Pony"

The "Oregon Pony," the locomotive which the Oregon Steamship Navigation Company used as a part of its transportation service from Portland, Ore., to The Dalles in 1862, is now the property of the State of Oregon and is being exhibited at the shops of the Oregon-Washington Railroad & Navigation Company at Portland. In 1862 the Oregon Steamship Navigation Company operated steamboats on the Columbia river between Portland and Bonneville, a distance of 39 miles. From the

The "Oregon Pony" Now Being Exhibited at Portland

latter point to Cascade Locks, a distance of four miles, it operated a railroad, the trains of which were pulled by the Oregon Pony. From Cascade Locks to The Dalles it again operated steamboats.

The locomotive was built in the early spring of 1862 at the Vulcan Iron Works, San Francisco, Cal. It was presented by David Hewes of San Francisco to the State of Oregon as the first Oregon locomotive and as a souvenir indicative of the state's early commerce as developed by the Oregon Steamship Navigation Company.

NEWS *of the* WEEK

Union Pacific—Photo by A. C. Smith

THE SIGNAL SECTION of the American Railway Association will hold its next regular meeting at the Mount Royal Hotel, Montreal, Can., on Tuesday, Wednesday and Thursday, September 13, 14 and 15.

THE NEW ENGLAND RAILROAD CLUB will hold its April meeting at Copley-Plaza Hotel, Boston, on Tuesday evening, the twelfth. C. W. Gennet, Jr., of the Robert W. Hunt Company, will give an address on steel rails, illustrated with lantern slides. The club will hold its annual banquet on May 10.

THE CANADIAN NATIONAL in 1926 did $45,000,000 of business in the United States alone, according to Sir Henry Thornton, president, in a statement to the House of Commons Committee on National Railways and Shipping, at Ottawa last week. Also, last year the Canadian National applied $1,318,369 for depreciation on its United States lines.

THE NEUTRAL MEMBERS of the board which is to arbitrate the controversy over the demands of the train service employees of western roads for increased wages, have not yet been selected, and the United States Railroad Board of Mediation has been asked to make the selection. The four members chosen by the road and by the employees have been unable to agree on a selection.

THE AVERAGE COST OF COAL per ton used as fuel for road locomotives by Class I railroads in January was $2.71, as compared with $2.61 in January, 1926, according to the Interstate Commerce Commission's monthly summary of railroad fuel statistics, covering only that charged to operating expenses. The average cost of fuel oil was 2.99 cents a gallon, as compared with 2.89 cents in January last year.

THE ST. LOUIS RAILWAY CLUB has elected the following officers for the ensuing year: President, Edward H. Harman, assistant to the general manager, Terminal Railroad Association of St. Louis; first vice-president, Richard J. Lockwood, assistant manager, Union Railways Company; second vice-president, Thomas J. Frier, purchasing agent, Ann Arbor; third vice-president, Merle W. Dancy; and secretary-treasurer, B. W. Frauenthal, general traffic agent, United Railways Company.

The "Blue Flag"

The Pullman Company will exhibit "The Blue Flag," its safety motion picture, at 14 cities in the west during April and May. The cities at which it will be shown include: Kansas City, Mo., April 12; Oklahoma City, Okla., April 13; El Paso, Tex., April 15; Los Angeles, Cal., April 18 and 19; San Francisco, Cal., April 20, 21 and 22; Portland, Ore., April 25; Seattle, Wash., April 26; Spokane, Wash., April 27; Salt Lake City, Utah, April 29 and 30; Denver, Colo., May 2; Omaha, Neb., May 3; St. Louis, Mo., May 4; St. Paul, Minn., May 5; and Minneapolis, Minn., May 6.

Southeastern Firemen's Wages

The Brotherhood of Locomotive Firemen and Enginemen and the southeastern railways have agreed to submit to arbitration the demands of the brotherhood for a wage increase of approximately one dollar a day, the United States Board of Meditation announced on April 2, the railways having agreed to withdraw their request that certain changes in rules be also arbitrated. The board of arbitration will consist of W. J. Jenks, vice-president of the Norfolk & Western; J. C. Goff, vice-president of the Brotherhood of Locomotive Firemen and Enginemen, and a third to be selected by them.

Traveling Salesmen's Organization Objects to Proposed Changes in Railway Accounting

The National Council of Traveling Salesmen's Associations has addressed to the Interstate Commerce Commission a set of resolutions adopted at a recent meeting of its executive committee, criticizing the proposed changes in the commission's accounting regulations as contained in the proposed tentative revisions drafted by the Bureau of Accounts, and also the commission's order on the subject of depreciation accounts. The commission is asked, before allowing either to go into effect, to hold public hearings in order that the council and others may have an opportunity to present their views.

As to the accounting rules the resolutions say in part: "The proposed rules perpetuate the objectionable features of the present methods of railway accounting, and serve to disguise and cover up, rather than to expose and illuminate, the essential facts concerning railway transportation costs, transportation revenues, and the investment in classes of properties devoted to and used for transportation purposes." The principal objection seems to be that "the principles of cost accountancy which are universally observed in all other industries in this country are wholly lacking."

As to the depreciation rules the resolutions say they would require the setting up of "arbitrary" charges on an anticipated basis which would "disturb operating expenses so as to result in an unwarranted increase in rates."

New York State Laws

The governor of New York has approved five of the laws passed by the recently closed legislature dealing with highway crossing problems, as follows: The amendment to chapter 774 of the laws of 1926; amendment to chapter 510 of 1926; amendment to chapter 233 of 1926, and senate print No. 1812. All these will appear in chapters 444, 445, 446 and 447 of the laws of 1927.

Chapter 444 regulates the settlement of land damages in crossing cases. Chapter 45 regulates appropriations of state funds for crossings outside of the cities of Buffalo, Syracuse and New York; also provides for the annual program, as described by Governor Smith below. Chapter 446 makes, for New York city, the same provisions that chapter 445 makes for the rest of the state. Chapter 447 prescribes the powers and duties of the Department of Public Works as related to grade crossings.

Governor Smith, in a memorandum accompanying these bills, said:

"These bills set up a proper planning and budgetary control over grade crossing

(*Continued on page* 1152)

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1927

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1926.
Akron, Canton & Youngstown	Feb.	171	$250,557	$284	$259,874	$35,341	$28,707	$10,807	$77,309	$16,455	$168,619	64.9	$91,255	$70,855	$40,226	$21,817
	2 mos.	171	503,012	630	521,288	67,001	60,591	21,081	156,326	31,263	336,222	64.5	185,066	144,241	82,647	39,683
Atchison, Topeka & Santa Fe	Feb.	9,402	10,762,860	3,395,207	15,275,231	1,881,912	3,072,120	438,155	4,799,661	370,759	10,544,423	69.0	4,730,808	3,357,304	3,359,603	2,698,569
	2 mos.	9,374	22,148,445	6,936,261	31,419,771	3,672,543	6,349,496	873,861	10,159,635	770,678	21,741,112	69.2	9,678,659	6,871,617	6,829,323	5,470,079
Gulf, Colorado & Santa Fe	Feb.	1,944	2,475,431	207,929	2,804,523	441,450	594,061	53,899	1,006,005	64,393	2,159,855	77.0	644,668	556,516	360,491	22,766
	2 mos.	1,944	5,709,359	487,539	6,451,612	980,942	1,262,553	109,145	2,250,106	130,739	4,733,211	73.4	1,718,401	1,542,418	1,127,037	255,639
Panhandle & Santa Fe	Feb.	954	1,170,170	134,184	1,368,523	143,209	283,817	12,582	495,991	24,606	940,576	68.7	427,947	379,206	250,733	262,192
	2 mos.	954	2,673,574	313,178	3,120,712	350,331	611,526	24,975	1,161,478	52,236	2,178,512	69.8	942,200	836,672	552,107	589,108
Atlanta & West Point	Feb.	93	154,944	60,749	245,901	27,770	43,602	12,235	91,655	13,228	193,505	78.7	52,396	34,517	21,080	33,538
	2 mos.	93	311,253	129,602	499,669	50,926	88,082	23,807	184,744	26,357	383,810	76.8	115,859	82,601	55,558	52,453
Western of Alabama	Feb.	133	160,690	57,559	242,996	31,178	52,366	12,096	78,440	12,399	191,668	78.9	51,328	35,876	38,933	65,031
	2 mos.	133	337,836	119,659	503,631	68,607	106,157	25,092	161,849	24,361	395,593	78.5	108,038	79,412	81,250	94,869
Atlanta, Birmingham & Coast	Feb.	639	345,199	29,874	413,383	114,080	77,465	27,048	172,443	18,321	422,161	102.1	—8,778	—23,183	—39,927	23,284
	2 mos.	639	701,979	67,486	849,376	222,020	163,112	54,731	347,633	37,200	850,602	100.1	—1,226	—29,868	—55,678	34,639
Atlantic Coast Line	Feb.	4,996	5,422,612	1,873,083	7,828,333	1,070,733	1,354,332	146,887	2,613,878	173,115	5,421,994	69.3	2,406,339	1,952,065	1,833,455	2,434,434
	2 mos.	4,996	10,408,752	3,753,430	15,231,654	2,134,465	2,783,043	313,773	5,362,178	354,042	11,041,282	72.5	4,190,372	3,233,178	3,132,174	4,613,071
Charleston & Western Carolina	Feb.	342	290,904	16,625	318,477	82,982	41,521	7,656	112,643	5,963	250,765	78.7	67,712	46,183	40,283	15,267
	2 mos.	342	548,686	35,327	605,845	160,639	87,794	13,629	232,898	12,358	507,318	83.7	98,527	55,498	53,061	73,958
Baltimore & Ohio	Feb.	5,322	15,054,321	1,802,865	17,903,907	2,330,164	4,147,957	435,527	6,919,949	599,131	14,599,260	81.5	3,304,647	2,314,463	2,183,427	2,005,763
	2 mos.	5,318	31,401,807	3,974,813	37,601,352	4,660,900	8,687,221	909,318	14,546,005	1,201,434	30,347,461	80.7	7,253,891	5,279,646	5,100,856	5,088,546
Baltimore & Ohio Chicago Term	Feb.	75	.....	.....	292,649	32,475	42,764	2,077	158,940	15,561	257,832	88.1	34,817	—12,786	76,167	103,517
	2 mos.	75	.....	.....	574,584	65,349	86,479	4,813	329,665	29,674	528,827	92.0	45,757	—48,926	133,768	178,322
Staten Island Rapid Transit	Feb.	23	94,314	104,212	220,366	27,789	24,274	1,939	107,063	14,576	175,641	79.7	44,725	27,725	—7,782	—37,329
	2 mos.	23	185,532	217,286	445,474	63,077	46,879	3,974	212,843	29,060	355,833	79.9	89,641	55,616	—15,166	—35,710
Bangor & Aroostook	Feb.	614	674,430	74,008	772,776	107,969	117,469	5,015	198,298	22,297	453,929	58.7	318,847	254,138	266,014	114,110
	2 mos.	614	1,346,021	156,809	1,552,732	217,542	241,733	10,335	403,078	45,865	924,582	59.5	628,150	502,184	543,687	296,946
Belt Ry. Co. of Chicago	Feb.	32	.....	.....	555,598	49,616	49,695	3,549	259,670	9,832	372,362	67.0	183,235	136,849	137,675	162,944
	2 mos.	32	.....	.....	1,117,085	90,075	116,961	6,964	550,719	20,158	784,877	70.3	332,207	239,435	278,361	324,763
Bessemer & Lake Erie	Feb.	228	817,772	12,442	848,526	56,135	299,795	13,573	291,273	32,562	676,858	79.8	171,668	133,389	184,206	76,626
	2 mos.	228	1,602,478	26,693	1,667,686	115,083	612,035	28,765	599,827	64,257	1,386,869	83.2	280,817	207,283	334,382	51,151
Bingham & Garfield	Feb.	33	42,894	.....	44,329	9,774	8,778	1,347	9,917	5,271	35,201	79.4	9,128	1,471	17,943	12,316
	2 mos.	33	88,643	.....	91,731	21,719	17,178	3,291	21,747	9,854	74,049	80.7	17,672	2,290	35,635	32,404
Boston & Maine	Feb.	2,111	3,712,329	1,545,706	5,889,861	657,210	1,199,329	79,287	2,470,931	209,285	4,629,427	78.6	1,260,434	961,533	749,654	480,752
	2 mos.	2,111	7,582,810	3,237,803	12,114,886	1,324,648	2,483,040	152,636	5,209,082	441,896	9,639,381	79.6	2,475,505	1,878,208	1,405,084	1,026,502
Brooklyn Eastern Dist. Term	Feb.	9	105,143	.....	111,065	5,527	10,363	85	43,617	5,646	65,238	58.7	45,827	39,452	39,452	40,252
	2 mos.	9	212,552	.....	224,735	10,346	22,548	732	91,321	11,360	136,307	60.7	88,428	75,678	75,678	83,426
Buffalo & Susquehanna R. R. Corp.	Feb.	253	134,982	2,277	143,077	26,616	49,719	1,680	47,838	7,365	133,218	93.1	9,859	7,759	28,754	4,085
	2 mos.	253	264,111	5,187	280,489	54,509	103,409	3,440	100,377	15,801	277,536	98.9	2,953	—1,247	39,380	4,843
Buffalo, Rochester & Pittsburgh	Feb.	601	1,408,477	88,355	1,539,687	123,839	492,609	27,754	567,324	43,939	1,257,857	81.7	281,830	231,666	246,181	290,283
	2 mos.	601	2,822,055	197,939	3,108,359	258,353	979,964	56,049	1,178,336	87,400	2,565,109	82.5	543,250	443,086	497,259	565,235
Canadian Pacific Lines in Maine	Feb.	233	261,267	29,926	503,636	24,615	52,746	4,999	128,005	3,710	214,075	70.5	89,561	76,261	55,876	70,878
	2 mos.	233	562,544	61,902	649,228	48,147	119,957	11,012	287,388	7,904	474,408	73.1	174,820	148,220	105,794	116,183
Canadian Pacific Lines in Vermont	Feb.	85	101,361	32,789	154,629	16,644	29,173	2,000	106,988	2,075	156,880	101.5	—2,251	—7,001	—7,450	.....
	2 mos.	85	221,994	69,766	333,298	35,941	59,563	4,355	215,195	4,608	319,662	95.9	13,636	4,136	3,238	.....
Central of Georgia	Feb.	1,911	1,691,132	408,707	2,294,717	271,314	391,229	75,383	846,367	101,338	1,697,598	74.0	597,119	468,319	437,865	448,625
	2 mos.	1,911	3,386,166	852,787	4,627,773	557,160	816,220	145,677	1,767,774	214,025	3,519,465	76.1	1,108,308	867,621	821,438	808,487
Central New Jersey	Feb.	690	3,118,632	649,271	4,026,933	462,958	977,063	39,463	1,856,893	110,228	3,470,466	86.2	556,467	401,429	224,020	—14,361
	2 mos.	690	6,529,462	1,357,666	8,427,915	886,792	2,053,642	83,192	3,907,852	252,810	7,234,302	85.8	1,193,613	887,115	594,704	—224,148
Central Vermont	Feb.	433	435,142	125,871	625,452	78,590	108,097	16,996	301,857	21,709	529,280	84.6	96,172	77,531	60,507	77,892
	2 mos.	433	926,748	232,765	1,285,952	165,374	224,222	34,639	648,967	46,767	1,123,619	87.4	162,333	125,062	92,207	129,226
Chesapeake & Ohio	Feb.	2,650	9,467,357	628,003	10,494,743	1,458,793	2,489,828	116,015	2,837,194	252,627	7,184,194	68.4	3,310,549	2,600,877	2,756,402	2,094,536
	2 mos.	2,650	19,197,886	1,379,677	21,385,890	2,902,986	5,042,421	235,839	5,985,922	520,583	14,748,808	69.0	6,637,082	5,218,569	5,473,568	4,394,157
Chicago & Alton	Feb.	1,055	1,671,958	487,257	2,355,145	221,241	470,525	71,655	907,149	66,291	1,744,985	74.1	610,160	502,380	324,444	218,677
	2 mos.	1,055	3,302,485	1,036,872	4,748,037	431,509	1,009,359	140,347	1,879,874	121,864	3,607,111	76.0	1,140,926	928,795	580,516	376,056
Chicago & Eastern Illinois	Feb.	945	1,873,733	307,897	2,328,977	240,145	548,750	81,871	912,208	74,365	1,872,131	80.4	456,846	341,155	214,413	62,326
	2 mos.	945	3,729,926	696,668	4,732,337	479,786	1,106,592	164,901	1,887,043	146,385	3,814,622	80.6	917,715	686,767	441,205	245,004
Chicago & Illinois Midland	Feb.	133	223,005	14,683	242,884	17,780	63,269	6,495	65,162	10,690	163,396	67.3	79,488	72,591	66,479	58,625
	2 mos.	133	419,674	24,887	455,002	33,037	101,369	13,893	131,339	23,703	303,341	66.7	151,661	136,510	128,293	129,772
Chicago & North Western	Feb.	8,460	7,901,889	1,799,138	10,784,626	1,099,338	2,501,327	195,378	4,497,459	329,815	8,686,421	80.5	2,098,205	1,294,540	1,087,355	1,196,308
	2 mos.	8,460	15,339,340	3,992,279	21,597,207	2,206,590	5,096,763	429,630	9,443,186	677,075	17,963,942	83.2	3,633,265	2,027,650	1,638,205	2,391,839

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1926.
Chicago, Burlington & Quincy	Feb.	9,391	$9,039,136	$1,581,424	$11,669,922	$1,003,527	$2,055,408	$256,759	$4,327,518	$349,757	$8,070,004	69.2	$3,599,918	$2,593,013	$2,284,628	$2,202,845
	2 mos.	9,391	17,968,709	3,403,132	23,566,719	2,084,153	4,240,718	505,117	9,083,935	706,128	16,820,920	71.4	6,745,799	4,760,200	4,191,385	4,105,423
Chicago Great Western	Feb.	1,496	1,376,259	255,838	1,778,286	175,039	357,118	72,440	774,339	53,594	1,443,771	81.2	334,515	241,901	97,666	140,914
	2 mos.	1,496	2,804,530	546,374	3,634,733	356,851	753,784	148,727	1,617,429	110,395	3,009,855	82.8	624,878	444,953	173,199	252,358
Chicago, Indianapolis & Louisville	Feb.	650	1,152,305	171,336	1,454,508	123,417	328,142	35,803	556,499	37,418	1,095,051	75.3	359,457	285,422	179,369	183,029
	2 mos.	650	2,227,864	397,477	2,893,319	245,233	652,208	77,070	1,156,906	76,563	2,237,134	77.3	656,185	514,210	302,680	350,337
Chicago, Milwaukee & St. Paul	Feb.	11,200	9,221,893	1,291,580	11,605,997	1,213,414	2,810,142	288,663	4,720,809	364,173	9,457,693	81.5	2,148,304	1,397,269	954,792	971,405
	2 mos.	11,200	18,298,251	2,820,183	23,382,256	2,399,856	5,818,315	542,887	9,928,260	750,867	19,570,352	83.7	3,811,904	2,308,198	1,472,999	1,752,698
Chicago River & Indiana	Feb.	19	.....	.....	541,243	43,387	80,724	723	212,996	15,986	353,816	65.4	187,427	147,404	258,323	240,243
	2 mos.	19	.....	.....	1,088,813	96,870	157,154	1,681	441,588	30,962	728,255	66.9	360,558	281,284	510,262	510,901
Chicago, Rock Island & Pacific	Feb.	7,561	7,648,087	1,672,787	10,179,716	1,292,385	2,085,622	230,049	3,943,327	321,834	7,899,982	77.6	2,279,734	1,645,653	1,291,089	742,502
	2 mos.	7,561	15,217,402	3,607,776	20,566,279	2,683,007	4,282,263	448,828	8,130,780	630,888	16,236,381	78.9	4,329,898	3,058,481	2,268,742	1,451,927
Chicago, Rock Island & Gulf	Feb.	458	455,157	88,931	579,591	71,803	53,164	19,645	207,760	17,242	364,709	62.9	214,882	188,326	161,219	64,110
	2 mos.	458	963,271	185,807	1,223,183	135,971	126,868	39,562	434,958	33,952	734,992	60.1	488,191	435,051	382,287	146,111
Chic., St. Paul, Minn. & Omaha	Feb.	1,746	1,494,185	358,276	1,993,447	231,121	401,095	32,262	914,557	73,211	1,657,656	83.2	335,791	237,882	163,882	125,319
	2 mos.	1,746	2,928,700	767,709	3,995,313	496,024	821,257	70,281	1,911,465	150,850	3,465,085	86.7	530,228	323,490	222,840	259,237
Cincinnati, Indianapolis & Western	Feb.	347	390,221	23,707	435,580	52,472	93,967	15,367	180,227	16,425	359,899	82.6	75,681	57,681	8,268	—2,109
	2 mos.	347	762,337	52,333	858,436	107,563	229,299	31,547	356,756	32,483	760,622	88.6	97,814	61,814	—28,524	33,956
Clinchfield Railroad	Feb.	309	639,322	24,527	674,783	62,271	171,366	23,340	141,244	19,064	417,146	61.8	257,637	182,637	285,639	268,733
	2 mos.	309	1,311,180	52,523	1,386,890	117,767	353,525	46,067	290,827	39,186	847,238	61.1	539,652	389,652	592,273	595,946
Colorado & Southern	Feb.	1,054	819,597	98,473	989,155	231,651	230,374	14,185	374,357	41,010	898,010	90.8	91,145	27,617	31,384	113,865
	2 mos.	1,054	1,775,969	202,205	2,129,778	406,698	480,609	27,183	760,978	86,427	1,775,487	83.4	354,291	227,170	231,459	230,476
Ft. Worth & Denver City	Feb.	491	803,298	207,598	1,068,030	207,235	153,554	17,444	323,718	35,394	746,963	69.9	321,067	246,152	245,856	262,729
	2 mos.	491	1,726,058	458,597	2,313,314	339,418	350,324	33,698	690,501	77,343	1,509,731	65.3	803,583	656,109	650,600	530,283
Wichita Valley	Feb.	271	153,793	18,098	177,989	17,684	10,853	38	48,128	1,455	77,948	43.8	100,041	90,349	70,067	24,827
	2 mos.	271	320,906	38,669	373,736	34,772	21,606	64	102,347	3,883	162,334	43.4	211,402	191,939	150,597	81,507
Columbus & Greenville	Feb.	167	122,750	19,693	142,355	35,460	17,023	3,740	56,891	11,785	124,869	87.7	17,456	16,233	3,679	9,413
	2 mos.	167	240,920	48,477	296,002	71,065	35,549	6,632	113,286	31,908	258,440	87.3	37,562	34,835	6,053	9,835
Conemaugh & Black Lick	Feb.	23	60,192	.....	118,364	13,491	29,594	1,024	81,371	3,003	128,483	108.5	—10,119	—11,319	—10,313	—16,216
	2 mos.	23	120,429	.....	245,442	24,863	61,120	1,957	172,962	6,523	267,425	109.0	—21,983	—24,383	—23,239	—27,185
Delaware & Hudson	Feb.	881	2,864,444	257,946	3,334,629	430,069	946,131	54,350	1,259,659	138,612	2,848,361	85.4	486,268	369,267	339,401	—173,695
	2 mos.	881	5,690,016	564,476	6,710,634	884,107	1,980,917	99,814	2,643,081	279,628	5,931,795	88.4	778,839	544,838	476,267	—774,997
Delaware, Lackawanna & Western	Feb.	999	4,373,159	956,652	6,055,503	625,534	1,207,163	125,508	2,662,432	172,309	4,841,446	80.0	1,214,057	713,041	761,428	462,490
	2 mos.	999	9,026,360	2,042,338	12,548,313	1,272,971	2,581,489	252,835	5,720,744	354,904	10,285,662	82.0	2,262,651	1,291,539	1,302,510	621,281
Denver & Rio Grande Western	Feb.	2,535	1,877,633	273,132	2,295,900	414,381	473,177	53,759	726,081	83,546	1,775,331	77.3	520,569	335,463	407,104	413,912
	2 mos.	2,535	4,063,597	557,282	4,929,185	845,319	975,269	107,070	1,529,587	169,982	3,677,229	74.6	1,251,956	881,705	1,021,112	1,015,012
Denver & Salt Lake	Feb.	255	228,949	22,560	268,494	52,986	105,337	1,493	64,702	8,156	232,674	86.7	35,820	29,788	33,649	17,075
	2 mos.	255	532,319	46,017	613,483	110,994	221,160	3,033	144,106	17,237	497,030	81.0	116,453	104,384	108,169	109,064
Detroit & Mackinac	Feb.	375	79,927	14,256	103,291	14,474	26,622	2,747	47,350	5,712	96,900	93.8	6,391	—3,376	—1,223	7,706
	2 mos.	375	151,310	32,222	203,733	29,470	56,565	4,361	97,039	11,399	198,716	97.6	5,017	—14,562	—10,214	2,350
Detroit & Toledo Shore Line	Feb.	50	520,325	.....	527,668	22,108	34,289	3,840	117,841	7,052	185,130	35.1	342,538	316,018	194,363	132,232
	2 mos.	50	989,804	.....	1,003,207	49,938	70,377	7,266	239,504	14,711	381,796	38.1	621,411	566,314	336,128	240,121
Detroit Terminal	Feb.	19	.....	.....	161,110	7,250	14,410	42	81,579	4,108	107,389	66.7	53,721	38,588	35,348	16,094
	2 mos.	19	.....	.....	294,169	20,074	28,452	43	153,144	7,800	209,513	71.2	84,656	58,018	46,076	19,826
Detroit, Toledo & Ironton	Feb.	495	744,938	4,603	761,033	93,040	133,490	9,404	262,791	48,290	546,771	71.8	214,262	188,820	128,655	183,701
	2 mos.	495	1,539,660	10,710	1,573,766	169,717	284,918	22,259	548,493	91,946	1,117,083	71.0	456,683	393,623	269,109	450,234
Duluth & Iron Range	Feb.	274	107,698	7,348	128,261	59,364	101,992	2,098	102,034	23,286	288,774	225.1	—160,513	—186,799	—185,597	—186,067
	2 mos.	274	201,928	15,541	243,320	109,404	203,984	4,410	205,669	42,091	565,558	232.4	—322,238	—395,125	—398,316	—302,250
Duluth, Missabe & Northern	Feb.	305	96,756	6,389	116,417	121,110	206,255	3,358	136,809	23,492	491,024	421.8	—374,607	—464,671	466,682	—466,957
	2 mos.	305	183,352	13,048	225,164	238,754	394,322	6,291	276,861	47,549	963,683	428.0	—739,519	—922,653	—929,429	—728,501
Duluth, Winnipeg & Pacific	Feb.	178	197,602	18,944	222,049	27,868	45,282	4,185	76,078	7,366	161,561	72.8	60,488	49,386	49,517	26,314
	2 mos.	178	394,844	34,054	440,026	49,503	93,682	8,500	158,789	14,294	326,308	74.1	113,718	91,717	101,350	55,585
Elgin, Joliet & Eastern	Feb.	460	1,983,363	5	2,133,490	150,946	349,759	18,334	693,944	44,750	1,251,270	58.7	882,220	782,765	667,368	413,260
	2 mos.	460	3,785,856	6	4,095,204	330,397	732,731	27,402	1,436,050	91,603	2,615,933	63.9	1,479,271	1,280,385	1,024,118	644,348
Erie Railroad	Feb.	2,047	6,632,766	844,172	8,137,303	960,372	2,241,823	141,941	3,464,360	293,469	7,143,536	87.8	993,767	606,081	590,544	52,173
	2 mos.	2,047	13,166,714	1,810,556	16,298,058	1,883,776	4,657,207	298,065	7,189,041	578,210	14,695,266	90.2	1,602,792	826,278	900,721	8,996
Chicago & Erie	Feb.	269	1,043,769	37,439	1,159,408	118,917	146,634	22,562	377,336	43,562	708,794	61.1	450,614	397,286	77,460	—45,726
	2 mos.	269	1,956,282	94,723	2,217,645	221,611	307,556	46,578	779,352	85,594	1,440,246	64.9	777,399	670,860	4,873	—206,765
New Jersey & New York	Feb.	45	23,625	90,221	118,266	19,787	22,114	1,706	69,006	3,801	116,414	98.4	1,852	—1,725	—33,573	—18,456
	2 mos.	45	46,337	184,870	239,701	37,450	46,408	3,234	147,091	7,780	241,952	100.9	—2,251	—9,543	—73,589	—30,014

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1927—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1926.
N. Y., Susquehanna & Western	Feb. 134	$294,835	$46,987	$379,065	$50,504	$74,436	$5,011	$205,193	$12,138	$347,281	91.6	$31,784	$3,301	—$23,252	—$64,865
	2 mos. 134	616,114	97,145	793,074	102,609	142,939	10,009	451,908	24,851	732,300	92.3	60,774	3,726	—46,884	—88,757
Evansville, Indianap's & Terre Haute	Feb. 146	222,207	6,638	235,929	23,548	30,090	2,381	72,552	6,534	135,073	57.3	100,856	88,567	51,542	28,232
	2 mos. 146	418,184	13,709	445,319	47,170	61,355	4,661	150,619	12,865	276,628	62.1	168,691	149,474	70,043	64,220
Florida East Coast	Feb. 846	1,092,252	839,911	2,158,952	322,728	296,242	32,451	658,791	54,094	1,415,161	65.5	743,791	674,048	495,641	694,012
	2 mos. 846	2,252,693	1,544,812	4,238,251	681,033	610,492	79,322	1,437,803	115,049	3,006,278	70.9	1,231,973	1,006,283	628,532	1,360,462
Fort Smith & Western	Feb. 249	124,860	12,893	144,138	25,343	32,424	5,352	51,813	7,598	121,990	84.6	22,148	19,119	8,542	—3,339
	2 mos. 249	255,518	28,789	300,266	50,875	63,933	11,503	106,861	15,782	247,964	82.6	52,302	43,761	19,867	11,409
Galveston Wharf	Feb. 13	.....	.....	159,679	37,381	4,599	1,399	34,830	3,628	92,864	58.2	66,815	49,815	49,700	18,745
	2 mos. 13	.....	.....	350,765	78,202	8,686	2,952	74,424	7,426	195,294	55.7	155,471	121,471	121,456	25,012
Georgia Railroad	Feb. 328	349,729	60,366	438,260	43,689	82,725	22,887	199,580	23,438	372,493	85.0	65,767	56,620	66,209	65,599
	2 mos. 328	703,512	134,957	896,664	86,517	168,259	47,306	416,013	46,602	765,071	85.3	131,593	111,528	134,121	140,135
Georgia & Florida	Feb. 445	140,514	16,154	164,075	30,860	22,532	9,565	57,849	7,631	128,664	78.4	35,411	27,411	23,696	19,359
	2 mos. 445	260,485	32,842	308,074	53,729	46,315	19,045	111,692	15,614	246,844	80.1	61,230	45,730	40,619	32,910
Grand Trunk Western	Feb. 347	1,371,502	149,127	1,604,627	115,547	367,200	36,986	562,204	59,083	1,148,792	71.6	455,825	372,079	270,416	138,398
	2 mos. 347	2,674,392	326,811	3,168,231	221,132	746,928	75,526	1,158,169	119,400	2,327,624	73.5	840,607	672,590	458,753	296,034
Atlantic & St. Lawrence	Feb. 166	194,432	31,793	246,496	23,422	36,134	5,497	114,520	8,626	189,821	77.0	56,675	43,725	—30,526	—67,988
	2 mos. 166	387,542	62,591	487,168	51,211	80,911	11,271	239,124	16,440	401,590	82.4	85,578	59,678	—79,747	—99,328
Chic., Det. & Canada Gr. Tr. Jct.	Feb. 59	245,220	582	285,446	13,253	18,850	4,293	99,065	4,954	140,263	49.1	143,183	134,923	107,479	106,053
	2 mos. 59	582,321	2,722	669,862	28,379	38,369	8,564	211,339	9,831	296,330	44.2	373,532	353,012	280,000	226,053
Det., Grand Haven & Milwaukee	Feb. 189	474,272	24,330	543,447	40,980	57,486	11,889	241,247	17,451	366,572	67.5	176,875	163,930	77,041	106,740
	2 mos. 189	970,402	57,990	1,129,472	83,947	117,704	23,979	494,881	34,496	752,568	66.6	376,904	350,932	168,397	197,220
Great Northern	Feb. 8,164	5,004,437	948,921	6,592,746	905,259	1,307,508	187,023	2,758,782	221,692	5,434,584	82.4	1,158,162	525,466	372,580	752,524
	2 mos. 8,164	9,943,574	2,003,768	13,269,786	1,590,603	2,925,535	396,612	5,687,370	460,515	11,180,664	84.3	2,089,122	785,011	874,859	1,623,499
Green Bay & Western	Feb. 234	106,718	7,157	120,398	19,409	18,601	4,255	49,869	2,892	95,026	78.9	25,372	17,372	14,406	27,353
	2 mos. 234	217,033	16,363	246,210	37,125	38,294	8,593	102,795	5,785	192,592	78.2	53,618	37,618	34,937	55,448
Gulf & Ship Island	Feb. 307	233,282	46,996	304,820	102,813	43,739	6,024	118,542	7,543	282,476	92.7	22,345	—1,490	—17,457	—31,663
	2 mos. 307	494,992	95,331	643,670	212,300	126,388	11,755	249,720	16,846	624,386	97.0	19,285	—28,351	—58,768	—93,753
Gulf, Mobile & Northern	Feb. 611	454,235	30,076	504,136	91,621	82,801	27,722	143,649	22,846	368,748	73.14	135,388	102,029	89,505	109,302
	2 mos 611	940,095	62,420	1,044,427	183,764	164,023	54,062	297,737	47,413	747,338	71.55	297,089	226,271	192,115	223,938
Hocking Valley	Feb. 348	1,256,595	65,104	1,397,466	158,058	378,959	15,713	432,345	43,714	1,028,781	73.6	368,685	257,510	305,123	273,616
	2 mos. 348	2,421,427	139,235	2,718,483	314,581	757,239	31,945	889,350	85,896	2,078,998	76.5	639,485	417,158	522,630	546,510
Illinois Central	Feb. 4,874	9,472,604	1,987,778	12,206,248	1,179,598	2,615,827	268,414	4,456,664	328,687	8,919,043	73.1	3,287,205	2,393,708	2,307,340	2,269,466
	2 mos. 4,874	19,091,695	4,245,052	24,899,903	2,546,036	5,436,120	591,023	9,340,768	681,390	18,716,963	75.2	6,182,940	4,421,950	4,270,998	4,660,852
Yazoo & Mississippi Valley	Feb. 1,710	1,668,721	305,969	2,097,602	376,933	380,596	44,348	809,615	68,780	1,678,016	80.0	419,586	255,207	200,904	303,378
	2 mos. 1,710	3,500,632	672,660	4,447,528	771,128	767,707	99,817	1,706,433	142,164	3,489,342	78.5	958,186	607,817	479,808	538,181
Illinois Central System	Feb. 6,584	11,150,652	2,297,443	14,316,873	1,556,531	3,000,690	312,762	5,274,305	397,503	10,609,338	74.1	3,707,485	2,644,705	2,516,542	2,581,764
	2 mos. 6,584	22,611,536	4,926,013	29,374,941	3,317,164	6,213,003	690,840	11,063,543	823,627	22,231,896	75.7	7,143,045	5,021,858	4,767,522	5,209,564
Kansas City, Mexico & Orient	Feb. 272	199,708	5,784	213,897	52,818	54,173	7,931	101,600	7,586	224,108	104.8	—10,211	—14,308	3,009	608
	2 mos. 272	369,177	11,320	396,844	99,435	105,438	15,421	177,573	34,590	432,434	108.9	—35,590	—43,748	—9,030	1,086
Kans. City, Mex. & Orient of Tex.	Feb. 465	406,393	18,088	440,144	97,877	70,713	9,078	188,548	8,974	374,918	85.2	65,226	58,198	4,239	10,323
	2 mos. 465	812,393	38,268	881,152	186,397	140,655	17,458	330,650	37,379	711,731	80.8	169,421	155,388	41,014	20,594
Kansas City Southern	Feb. 784	1,139,452	96,019	1,386,513	130,338	229,200	47,130	451,454	73,697	931,583	67.2	454,930	344,508	297,360	305,238
	2 mos. 784	2,325,217	214,368	2,831,300	278,149	479,790	95,168	945,330	148,230	1,945,902	68.7	885,398	664,565	596,367	676,106
Texarkana & Ft. Smith	Feb. 81	202,276	9,421	224,758	24,516	23,525	5,963	67,147	10,275	132,454	58.9	92,304	77,361	40,958	39,881
	2 mos. 81	399,658	19,116	450,939	49,694	45,998	11,283	136,817	20,263	265,946	59.0	184,993	155,106	84,818	105,265
Kansas, Oklahoma & Gulf	Feb. 326	204,594	5,310	215,607	120,185	26,449	8,097	65,611	6,406	221,609	102.8	—6,002	—15,745	—33,725	3,679
	2 mos. 326	405,636	11,529	431,336	248,057	51,699	17,041	140,522	13,229	465,259	107.9	—33,923	—53,409	—89,793	8,985
Lake Superior & Ishpeming	Feb. 160	57,960	3,981	66,120	25,251	25,473	562	33,368	4,825	89,479	135.3	—23,359	—34,961	—37,936	—39,150
	2 mos. 160	110,582	8,090	126,814	49,578	52,618	1,288	67,986	10,699	182,169	143.7	—55,355	—78,555	—83,522	—74,223
Lake Terminal	Feb. 13	.....	.....	87,861	8,076	20,736	.....	51,891	1,800	82,503	93.9	5,358	—1,871	14,534	—6,117
	2 mos. 13	.....	.....	180,403	19,502	40,819	.....	107,783	3,672	171,776	95.2	8,627	—4,702	3,440	—18,629
Lehigh & Hudson River	Feb. 96	242,209	1,967	257,124	27,348	44,428	1,973	99,536	10,315	183,600	71.4	73,524	59,066	39,678	20,253
	2 mos. 96	492,657	4,145	531,334	54,944	86,837	3,923	215,643	19,666	381,013	71.7	150,321	121,972	76,054	22,251
Lehigh & New England	Feb. 217	349,244	1,273	356,730	34,477	94,709	6,851	135,807	15,221	287,065	80.5	69,665	56,604	66,842	5,789
	2 mos. 217	733,497	2,627	748,584	65,454	194,031	12,373	282,524	32,031	586,413	78.3	162,171	134,481	145,253	—46,406
Lehigh Valley	Feb. 1,363	4,573,747	507,080	5,518,694	514,000	1,246,430	129,873	2,464,780	142,905	4,526,155	82.0	992,539	738,479	486,517	—90,623
	2 mos. 1,363	9,280,593	1,149,165	11,334,671	1,083,744	2,732,724	266,763	5,242,777	335,569	9,715,203	85.7	1,619,468	1,152,948	645,412	—577,913
Louisiana & Arkansas	Feb. 302	302,603	13,916	325,504	57,816	66,588	12,009	99,622	12,043	247,979	76.2	77,525	50,411	39,767	65,277
	2 mos. 302	606,687	30,603	653,664	124,171	132,115	23,842	205,792	23,104	508,812	77.8	144,852	88,584	61,334	118,574

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1926.
Louisiana Ry. & Nav. Co.	Feb.	337	$264,818	$14,367	$297,360	$66,056	$37,335	$11,069	$127,127	$10,183	$249,527	83.1	$47,833	$24,387	—$7,262	—$34,496
	2 mos.	337	541,673	30,322	607,025	131,209	84,831	23,460	281,636	20,034	534,860	88.1	72,165	26,734	—40,985	—75,946
Louisiana Ry. & Nav. Co. of Tex.	Feb.	206	89,361	4,051	96,990	17,644	13,262	2,976	43,871	5,955	83,696	86.3	13,294	9,289	—4,414	—8,892
	2 mos.	206	171,397	9,508	189,013	53,590	27,023	4,851	85,354	12,256	182,916	96.8	6,097	—1,911	—28,566	—25,515
Louisville & Nashville	Feb.	5,059	9,205,325	1,620,207	11,417,682	1,776,039	2,664,356	265,950	4,080,767	308,475	9,139,615	80.0	2,278,067	1,721,711	1,664,516	2,027,418
	2 mos.	5,059	18,316,882	3,480,143	23,005,923	3,513,735	5,400,412	572,314	8,363,542	647,088	18,580,641	80.8	4,425,282	3,348,202	3,236,546	3,972,070
Louisville, Henderson & St. Louis	Feb.	199	285,029	46,581	345,473	52,742	49,953	7,733	107,883	11,038	229,349	66.4	116,124	92,378	84,146	75,855
	2 mos.	199	543,405	98,544	673,400	101,184	100,447	13,650	214,562	22,673	452,516	67.2	220,884	174,536	161,415	179,899
Maine Central	Feb.	1,121	1,268,487	299,646	1,695,315	232,576	311,140	12,278	683,685	47,814	1,287,086	75.9	408,229	294,315	228,435	116,748
	2 mos.	1,121	2,627,053	621,156	3,516,161	498,157	612,574	26,206	1,439,271	98,566	2,673,968	76.0	842,193	614,363	492,596	315,611
Midland Valley	Feb.	364	259,396	28,297	298,619	33,503	40,134	6,888	81,116	14,965	176,571	59.1	122,048	102,562	85,751	98,746
	2 mos.	364	543,422	62,959	630,796	58,940	73,437	14,601	175,468	31,266	353,677	56.1	277,119	237,715	201,015	211,676
Minneapolis & St. Louis	Feb.	1,627	941,542	91,446	1,088,213	110,183	244,892	35,184	527,304	44,970	959,887	88.2	128,326	63,446	19,793	89,038
	2 mos.	1,627	1,820,698	192,787	2,127,205	213,513	519,693	70,869	1,100,422	88,794	1,990,137	93.6	137,068	9,360	—63,805	108,084
Minn., St. Paul & S. S. Marie	Feb.	4,396	2,502,786	421,184	3,164,303	407,234	699,163	66,650	1,374,356	106,470	2,665,764	84.2	498,539	280,133	174,522	246,265
	2 mos.	4,396	4,994,160	937,022	6,417,744	820,867	1,411,540	135,803	2,859,191	223,394	5,478,206	85.4	939,538	490,619	282,734	323,817
Duluth, South Shore & Atlantic	Feb.	589	276,564	63,130	376,520	52,274	63,932	8,412	190,070	12,797	331,585	88.1	44,935	15,935	—1,401	35,164
	2 mos.	589	551,904	147,167	766,712	105,780	133,222	15,479	372,387	25,857	661,829	86.3	104,883	46,883	13,889	74,759
Spokane International	Feb.	165	76,565	9,705	91,371	16,939	7,837	3,522	33,519	6,255	69,120	75.6	22,251	16,865	10,351	16,640
	2 mos.	165	163,154	19,802	193,883	34,418	17,430	7,236	70,607	12,727	144,515	74.5	49,368	38,571	26,257	39,138
Mississippi Central	Feb.	161	118,775	7,680	130,604	18,807	23,753	8,645	36,263	7,362	94,830	72.6	35,774	27,572	27,831	34,188
	2 mos.	161	245,742	17,256	271,712	40,637	50,092	16,710	74,232	15,358	197,029	72.5	74,683	57,449	60,967	69,940
Missouri & North Arkansas	Feb.	364	115,326	14,725	137,767	32,414	13,863	10,201	50,468	7,012	113,958	82.6	23,809	21,262	11,554	—20,231
	2 mos.	364	223,733	31,593	272,936	67,581	33,093	19,498	105,336	14,543	240,051	87.9	32,885	27,957	8,491	—36,099
Missouri-Kansas-Texas	Feb.	1,799	2,219,916	333,658	2,731,388	250,691	645,367	60,934	714,116	92,792	1,768,458	64.7	962,930	755,090	727,222	715,541
	2 mos.	1,799	4,462,366	711,929	5,550,002	510,668	1,369,499	133,065	1,494,413	183,775	3,707,150	66.8	1,842,852	1,448,247	1,524,132	1,482,261
Missouri-Kansas-Texas of Texas	Feb.	1,389	1,261,573	311,913	1,703,850	217,375	269,766	51,397	677,559	62,829	1,291,260	75.8	412,590	359,820	199,649	173,718
	2 mos.	1,389	2,695,134	656,534	3,633,901	448,900	554,163	102,114	1,445,678	128,763	2,705,935	74.5	927,966	822,954	478,579	341,048
Missouri Pacific	Feb.	7,348	8,189,752	1,220,180	10,163,887	1,312,174	1,985,920	305,805	3,701,518	338,738	7,675,914	75.5	2,487,973	1,989,903	1,580,362	1,476,600
	2 mos.	7,348	16,599,852	2,560,691	20,699,189	2,503,977	4,161,812	584,868	7,834,419	685,725	15,844,964	76.6	4,854,225	3,904,667	3,102,463	2,985,293
Gulf Coast Lines	Feb.	973	1,194,158	179,940	1,442,478	262,254	237,181	36,931	429,658	52,434	1,011,954	70.15	430,524	366,014	253,629	200,338
	2 mos.	973	2,343,224	374,219	2,854,535	523,193	447,348	76,950	871,700	107,551	2,021,616	70.82	832,919	703,634	499,574	351,369
International-Great Northern	Feb.	1,159	1,108,881	189,546	1,440,227	235,991	259,239	33,188	505,765	59,087	1,181,211	82.01	259,016	219,208	113,258	62,798
	2 mos.	1,159	2,310,129	411,994	3,031,359	502,572	540,144	68,197	1,256,062	120,962	2,457,846	81.08	573,513	485,593	274,108	153,222
San Antonio, Uvalde & Gulf	Feb.	318	124,115	24,487	161,843	36,054	21,785	4,340	44,471	5,176	112,528	69.5	49,315	45,739	21,767	28,721
	2 mos.	318	242,586	51,450	319,738	75,166	43,659	8,613	94,849	10,439	234,284	73.3	85,454	78,404	27,977	47,113
Texas & Pacific	Feb.	1,954	2,359,425	469,581	3,016,283	495,334	542,820	70,904	1,058,524	93,183	2,271,137	75.3	745,146	589,324	460,982	384,086
	2 mos.	1,954	4,687,409	959,054	6,026,566	1,002,628	1,066,061	140,163	2,219,639	192,082	4,624,804	76.7	1,401,762	1,087,200	815,091	790,020
Mobile & Ohio	Feb.	1,161	1,150,814	102,297	1,324,616	215,750	257,671	51,740	512,970	43,741	1,081,878	81.7	242,738	163,397	141,396	271,321
	2 mos.	1,161	2,388,732	220,786	2,757,983	444,927	510,821	100,711	1,072,958	90,675	2,220,215	80.5	537,768	374,962	298,953	539,669
Monongahela	Feb.	169	585,721	27,260	619,265	75,000	65,000	1,054	179,393	9,823	329,967	53.3	289,298	262,798	172,903	199,556
	2 mos.	169	1,248,949	57,080	1,318,456	150,000	130,000	2,245	374,434	19,506	675,607	51.2	642,849	581,349	394,540	406,565
Monongahela Connecting	Feb.	7	.....	.....	164,725	15,597	29,324	375	75,666	3,130	124,092	75.3	40,633	31,747	28,688	26,307
	2 mos.	7	.....	.....	343,882	35,084	63,916	749	158,285	7,052	265,086	77.1	78,796	62,097	55,091	80,827
Montour	Feb.	57	111,170	575	112,289	15,274	45,771	1,073	28,270	7,332	97,720	87.0	14,569	7,814	40,547	10,187
	2 mos.	57	243,657	919	246,174	31,666	92,728	2,310	59,251	14,250	200,205	81.3	45,969	30,491	94,145	12,745
Nashville, Chattanooga & St. Louis	Feb.	1,259	1,326,746	321,084	1,770,470	238,854	397,904	87,041	678,682	78,486	1,486,656	84.0	283,814	208,984	232,899	358,665
	2 mos.	1,259	2,603,276	688,520	3,557,300	447,247	812,869	174,545	1,410,117	162,277	3,022,485	85.0	534,815	383,844	454,338	645,671
Nevada Northern	Feb.	165	70,098	6,832	83,466	12,240	3,437	1,101	15,969	4,360	37,257	44.6	46,209	39,644	39,174	28,231
	2 mos.	165	141,002	13,934	168,177	25,561	10,017	1,992	33,768	9,011	80,686	48.0	87,491	74,368	71,541	52,598
Newburgh & South Shore	Feb.	7	.....	.....	110,931	16,450	37,843	.....	55,214	3,936	113,443	86.6	17,488	5,275	16,397	25,584
	2 mos.	7	.....	.....	253,223	22,037	78,261	.....	116,370	8,157	224,825	88.8	28,398	4,176	20,558	34,059
New Orleans Great Northern	Feb.	274	231,610	22,497	261,512	33,136	47,826	8,397	73,371	9,977	171,569	65.6	89,943	73,143	53,475	54,527
	2 mos.	274	471,236	47,113	535,331	78,093	99,311	14,497	151,978	20,774	363,816	68.0	171,515	137,995	98,574	114,793
New York Central	Feb.	6,925	19,257,535	6,849,135	29,596,694	3,575,508	6,407,108	408,511	11,187,210	1,129,305	23,094,819	78.0	6,501,875	4,484,021	4,022,074	4,109,587
	2 mos.	6,925	37,964,525	15,425,778	60,599,993	7,226,499	12,958,293	794,088	23,470,897	2,503,547	47,853,783	79.0	12,746,210	8,691,483	7,980,059	8,382,188
Cincinnati Northern	Feb.	244	386,916	5,430	397,347	39,493	67,103	6,508	138,139	10,860	262,103	66.0	135,244	108,814	79,635	92,380
	2 mos.	244	730,648	12,174	753,476	79,746	145,852	12,501	273,331	22,422	532,801	70.7	220,675	173,543	117,938	152,871
Cleve., Cin., Chicago & St. Louis	Feb.	2,397	5,493,508	1,121,595	7,162,435	749,698	1,555,451	145,102	2,796,551	263,938	5,573,539	77.8	1,588,896	1,177,204	1,152,137	1,152,303
	2 mos.	2,397	10,894,179	2,517,910	14,527,001	1,430,813	3,345,121	282,152	5,818,736	546,833	11,562,267	79.6	2,964,734	2,176,374	2,045,440	2,294,992

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1926.
Indiana Harbor Belt	Feb.	116	.....	.....	$936,616	$103,795	$131,206	$4,576	$428,546	$26,852	$695,168	74.2	$241,448	$202,596	$126,361	$123,889
	2 mos.	116	.....	.....	1,839,816	228,573	284,166	10,323	888,106	52,985	1,464,228	79.6	375,588	307,955	187,985	190,322
Michigan Central	Feb.	1,855	$4,838,041	$1,362,142	6,817,950	612,442	1,242,359	123,155	2,392,090	260,973	4,713,562	69.1	2,104,388	1,638,668	1,596,521	1,698,709
	2 mos.	1,855	9,189,294	3,135,766	13,577,866	1,305,082	2,520,539	252,983	4,898,984	566,174	9,732,665	71.7	3,845,201	2,961,360	2,865,734	3,275,035
Pittsburgh & Lake Erie	Feb.	231	2,309,149	225,113	2,618,337	369,190	875,521	21,995	897,402	79,309	2,245,260	85.8	373,077	224,584	602,257	791,504
	2 mos.	231	4,686,030	478,167	5,334,113	773,768	1,793,282	45,940	1,884,902	162,210	4,663,186	87.4	670,927	361,832	1,218,778	1,572,028
New York, Chicago & St. Louis	Feb.	1,691	3,893,365	113,791	4,122,992	454,249	878,371	118,326	1,528,233	160,590	3,144,984	76.3	978,008	709,356	544,700	655,305
	2 mos.	1,691	7,990,988	250,268	8,481,959	914,093	1,778,574	242,848	3,221,218	376,364	6,546,090	77.2	1,935,869	1,398,368	1,009,542	1,415,683
N. Y., New Haven & Hartford	Feb.	1,911	4,866,720	3,709,943	9,663,221	1,248,422	2,043,061	85,571	3,726,441	300,659	7,587,654	78.5	2,075,567	1,561,466	987,187	929,932
	2 mos.	1,911	9,779,014	7,871,039	19,929,951	2,692,593	4,323,418	160,632	7,778,926	624,768	15,945,717	80.0	3,984,234	2,956,026	1,758,341	2,227,133
Central New England	Feb.	264	848,858	2,098	566,896	78,450	96,546	6,651	195,952	16,424	394,023	69.5	172,873	139,252	86,633	—7,352
	2 mos.	264	1,107,882	4,974	1,148,718	175,378	206,052	13,882	424,799	33,243	853,354	74.3	295,364	229,086	112,386	—9,021
New York Connecting	Feb.	20	226,674	.....	253,200	25,741	15,089	.....	58,689	1,941	101,460	40.1	151,740	111,240	89,653	66,999
	2 mos.	20	445,448	.....	496,232	57,853	23,625	.....	125,877	3,508	210,863	42.5	285,369	204,369	169,880	177,863
New York, Ontario & Western	Feb.	569	516,272	69,187	728,855	100,859	213,378	17,218	418,568	36,245	792,704	108.8	—63,849	—114,696	—159,352	—181,991
	2 mos.	569	1,043,626	158,883	1,501,191	213,695	448,366	36,031	894,368	72,990	1,677,553	111.8	—176,362	—277,218	—367,351	—406,796
Norfolk & Western	Feb.	2,241	7,621,695	513,471	8,406,382	1,136,297	1,840,362	112,787	2,396,384	194,774	5,682,491	67.6	2,723,891	1,873,462	2,112,279	2,445,351
	2 mos.	2,241	16,076,734	1,176,351	17,808,117	2,537,522	3,872,331	211,459	5,020,148	401,554	12,052,257	67.7	5,755,860	4,055,139	4,476,936	5,149,303
Norfolk Southern	Feb.	931	664,162	42,514	744,209	92,240	99,243	26,790	277,166	30,492	521,393	70.1	222,816	173,975	133,832	118,599
	2 mos.	931	1,311,068	99,159	1,486,617	190,483	221,688	48,935	565,618	61,262	1,081,050	72.7	405,567	308,151	247,755	187,156
Northern Pacific	Feb.	6,677	4,724,877	832,249	6,078,075	704,447	1,420,574	173,883	2,439,985	251,433	5,065,312	83.3	1,012,763	353,886	694,009	931,925
	2 mos.	6,680	9,180,911	1,761,615	12,047,698	1,348,419	2,841,446	364,224	5,096,940	503,226	10,322,484	85.7	1,725,214	405,213	1,037,564	1,943,659
Northwestern Pacific	Feb.	477	214,109	113,256	359,392	90,001	86,598	6,308	188,615	18,361	389,605	108.4	—30,213	—70,958	—78,880	—4,097
	2 mos.	477	447,857	236,703	756,843	188,560	161,574	11,113	390,110	37,292	788,053	104.1	—31,210	—112,678	—127,833	—18,389
Pennsylvania R. R.	Feb.	10,520	37,068,444	10,362,589	51,837,333	6,319,160	12,151,231	745,866	20,425,752	1,573,188	41,893,578	80.8	9,943,755	8,455,951	7,142,845	4,549,448
	2 mos.	10,520	73,458,505	22,956,039	105,559,726	12,881,843	25,469,688	1,537,641	43,011,776	3,152,991	87,528,173	82.9	18,031,553	14,549,069	11,862,482	10,356,929
Baltimore, Chesapeake & Atlantic	Feb.	130	53,195	16,905	72,888	7,515	30,260	1,318	71,704	2,918	113,715	156.0	—40,827	—40,875	—41,708	—28,535
	2 mos.	130	100,896	37,149	143,983	16,596	46,400	2,845	144,465	6,109	216,415	150.3	—72,432	—72,525	—74,699	—71,515
Long Island	Feb.	401	761,537	1,710,962	2,655,532	452,908	535,299	23,692	1,277,356	79,637	2,380,093	89.6	275,439	227,081	206,049	129,607
	2 mos.	401	1,571,051	3,534,004	5,479,154	811,279	1,096,666	59,518	2,679,211	179,273	4,846,962	88.5	632,192	517,763	443,752	302,594
West Jersey & Seashore	Feb.	378	371,845	364,300	772,648	139,613	179,179	13,504	420,747	24,649	778,330	100.7	—5,682	—5,706	—14,237	—41,261
	2 mos.	378	770,266	736,139	1,582,504	284,029	368,561	27,740	880,902	48,407	1,610,455	101.8	—27,951	—28,054	—47,677	—105,803
Peoria & Pekin Union	Feb.	19	24,652	3,240	152,444	8,836	14,351	1,073	64,545	7,436	96,241	63.1	56,203	39,203	57,565	53,079
	2 mos.	19	44,311	7,028	303,035	19,505	34,056	1,973	140,461	14,847	210,842	69.6	92,193	58,193	93,507	118,288
Pere Marquette	Feb.	2,244	2,937,554	211,330	3,324,947	237,874	731,030	53,804	1,189,673	109,878	2,332,530	70.2	992,417	800,691	777,652	700,511
	2 mos.	2,244	5,514,071	484,213	6,353,536	463,303	1,494,680	111,338	2,406,439	220,080	4,717,068	74.2	1,636,468	1,253,601	1,117,925	1,148,058
Pittsburgh & Shawmut	Feb.	102	129,740	5,509	136,869	23,525	43,944	1,626	42,727	7,872	119,694	87.5	17,175	16,055	27,750	40,198
	3 mos.	102	265,641	10,237	279,479	40,689	92,155	2,930	88,841	16,169	240,784	86.2	38,695	36,446	57,292	83,420
Pittsburgh & West Virginia	Feb.	92	433,004	5,830	472,738	33,756	60,928	8,954	87,612	27,565	227,555	48.1	245,183	181,906	264,951	192,099
	2 mos.	92	838,004	12,024	916,370	60,754	126,786	18,154	180,881	54,373	463,194	50.5	453,176	329,594	507,843	415,230
Pittsburgh, Shawmut & Northern	Feb.	198	159,590	3,076	166,443	22,234	30,126	1,514	68,001	6,685	128,560	77.2	37,883	34,905	22,461	17,641
	2 mos.	198	326,182	7,123	340,611	47,652	64,170	3,098	142,366	13,781	271,067	79.5	69,544	63,587	40,410	28,422
Quincy, Omaha & Kansas City	Feb.	249	40,640	15,067	61,218	15,030	11,990	762	27,934	2,640	58,178	95.0	3,040	—2,943	—5,695	—4,943
	2 mos.	249	81,154	27,010	120,505	45,655	27,033	1,650	64,057	5,069	142,605	118.3	—22,100	—34,066	—39,234	—11,169
Reading	Feb.	1,139	6,298,274	734,803	7,362,879	856,222	1,685,870	73,098	2,991,155	211,814	5,820,119	79.0	1,542,760	1,130,857	1,162,641	1,054,771
	2 mos.	1,139	13,026,869	1,577,384	15,276,009	1,722,166	3,558,945	151,801	6,194,585	414,414	12,044,107	78.8	3,231,902	2,373,769	2,514,799	1,999,261
Atlantic City	Feb.	161	121,763	95,813	231,233	87,386	23,998	8,538	175,698	4,932	300,682	130.0	—69,449	—103,697	—125,935	—100,342
	2 mos.	161	238,299	202,317	469,104	179,287	64,906	12,052	391,645	9,944	658,116	140.3	—189,012	—257,500	—313,009	—233,966
Perkiomen	Feb.	41	86,518	3,781	93,219	7,851	5,364	107	40,988	1,058	55,413	59.4	37,806	33,457	27,426	25,884
	2 mos.	41	182,001	7,852	195,712	14,915	11,387	213	86,633	2,227	115,462	59.0	80,250	68,811	56,935	85,105
Port Reading	Feb.	19	171,436	.....	221,670	58,415	8,352	229	82,581	1,453	151,030	68.1	70,640	55,325	—26,173	1,032
	2 mos.	19	339,038	.....	436,382	82,103	17,923	458	167,532	3,193	271,188	62.1	165,194	134,570	—28,617	42,361
Richmond, Fredericksburg & Potomac	Feb.	117	422,781	383,575	984,496	116,344	177,279	8,486	377,187	35,218	750,632	76.2	233,864	183,314	103,723	269,995
	2 mos.	117	817,079	816,810	1,969,382	212,704	353,828	17,008	762,158	74,641	1,488,490	75.6	480,892	373,390	247,055	568,944
Rutland	Feb.	413	291,112	89,922	475,561	83,561	106,582	9,823	207,506	15,478	424,428	89.2	51,133	28,664	38,368	38,381
	2 mos.	413	568,233	198,863	966,911	166,539	215,136	20,436	427,983	29,105	861,859	89.1	105,052	59,144	79,846	79,151
St. Louis, San Francisco	Feb.	4,951	4,992,511	1,070,472	6,468,539	707,929	1,154,561	107,901	2,189,869	232,522	4,372,994	67.6	2,095,545	1,674,220	1,747,103	1,702,924
	2 mos.	4,951	10,047,196	2,332,903	13,227,669	1,502,148	2,456,105	219,983	4,635,572	467,755	9,239,808	69.9	3,987,861	3,197,797	3,364,627	3,389,624
Ft. Worth & Rio Grande	Feb.	233	68,344	15,298	93,266	18,098	17,197	3,014	50,769	5,233	94,277	101.1	—1,011	—5,154	—12,037	1,089
	2 mos.	233	147,598	31,510	199,131	41,220	36,714	6,522	105,085	10,768	200,018	100.4	—887	—9,095	—23,451	—6,367
St. Louis, San Francisco & Texas	Feb.	137	133,891	13,464	150,748	21,680	22,469	5,014	58,846	7,553	115,561	76.7	35,187	32,646	9,402	—6,500
	2 mos.	137	288,849	28,969	325,260	46,392	49,327	10,221	123,236	14,937	244,062	75.0	81,198	76,103	28,776	33,489
St. Louis Southwestern	Feb.	940	1,156,379	91,388	1,304,344	207,523	211,578	60,404	340,242	62,392	890,360	68.3	413,984	365,035	281,226	306,049
	2 mos.	940	2,424,853	202,384	2,756,606	398,580	459,443	115,672	714,272	122,569	1,829,949	66.4	926,657	807,142	627,186	613,391
St. Louis Southwestern of Texas	Feb.	807	438,187	44,852	529,315	218,703	108,913	25,540	225,265	32,621	612,172	115.7	—82,857	—109,862	—57,845	16,588
	2 mos.	807	952,003	100,373	1,147,254	426,931	235,629	49,919	466,826	63,993	1,242,531	108.3	—95,277	—148,963	—39,111	74,424
Seaboard Air Line	Feb.	4,260	4,039,118	1,145,512	5,653,275	748,620	842,707	209,915	2,152,934	195,453	4,250,842	75.2	1,402,433	1,076,507	920,711	846,483
	2 mos.	4,242	8,161,680	2,409,257	11,510,146	1,601,804	1,729,746	402,031	4,506,170	395,288	8,826,096	76.7	2,684,050	2,057,465	1,740,338	1,722,323

Revenues and Expenses of Railways

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1926.
Southern Ry.	Feb.	6,771	$8,669,238	$2,001,308	$11,540,733	$1,677,045	$2,133,543	$254,765	$4,027,953	$321,073	$8,477,425	73.5	$3,063,308	$2,393,058	$2,187,001	$2,255,006
	2 mos.	6,771	16,955,864	4,532,453	23,271,471	3,438,239	4,469,678	514,201	8,288,534	660,170	17,529,910	75.3	5,741,561	4,320,009	3,957,619	4,157,764
Alabama Great Southern	Feb.	314	573,998	142,997	766,931	139,531	163,291	20,081	242,245	22,588	594,934	77.6	171,997	130,501	147,914	152,578
	2 mos.	314	1,149,845	315,117	1,566,200	273,928	319,358	41,907	496,350	45,244	1,191,965	76.1	374,235	266,618	307,817	355,263
Cin., New Orleans & Tex. Pacific.	Feb.	338	1,273,053	312,659	1,682,132	268,108	368,837	43,185	513,833	51,056	1,263,328	75.1	418,804	338,078	295,690	483,960
	2 mos.	338	2,466,463	703,282	3,368,053	554,246	742,280	87,722	1,070,906	102,255	2,593,001	77.0	775,052	589,291	535,358	989,875
Georgia Southern & Florida	Feb.	401	270,685	93,156	394,948	85,288	82,221	13,952	168,395	11,866	365,172	92.5	29,776	11,012	—11,764	70,493
	2 mos.	401	549,623	209,453	820,783	168,034	170,961	27,514	351,062	23,917	748,729	91.2	72,054	31,753	—3,826	185,046
New Orleans & Northeastern	Feb.	204	378,647	78,035	485,993	62,978	74,736	12,510	135,836	15,425	305,985	63.0	180,008	142,463	101,818	109,895
	2 mos.	204	741,755	164,191	964,123	123,731	164,431	25,491	287,900	29,772	640,588	66.4	323,535	235,483	161,856	187,614
Northern Alabama	Feb.	110	95,678	7,844	105,618	20,792	4,472	2,503	34,902	2,780	65,447	62.0	40,171	35,396	9,869	20,024
	2 mos.	110	202,304	16,465	223,161	42,832	9,003	4,583	72,801	5,578	134,795	60.4	88,366	78,338	26,153	22,392
Southern Pacific	Feb.	8,929	10,284,590	3,104,526	14,745,361	2,357,954	2,722,481	367,134	5,126,207	565,959	11,440,912	77.6	3,304,449	2,036,594	1,988,399	1,694,991
	2 mos.	8,929	21,001,657	6,356,196	30,133,420	4,554,084	5,650,060	744,701	10,597,872	1,197,545	23,455,931	77.8	6,677,489	4,091,311	3,882,003	3,826,016
Atlantic Steamship Lines	Feb.	...	814,519	27,731	1,053,897	18,685	196,528	14,305	625,295	33,675	888,488	84.3	165,409	155,384	155,252	129,043
	2 mos.	...	1,512,178	62,733	1,942,440	33,468	347,805	30,479	1,227,574	67,903	1,707,229	87.9	235,211	223,566	223,303	181,782
Galveston, Harrisb'g & S. Antonio.	Feb.	2,160	1,517,122	404,423	2,095,901	450,347	486,224	63,738	878,848	106,012	2,005,057	95.7	90,844	—1,436	—58,665	66,413
	2 mos.	2,131	3,133,081	858,285	4,349,181	1,036,968	1,019,464	127,560	1,783,630	218,008	4,225,745	97.2	123,436	—79,770	—213,455	277,479
Houston & Texas Central	Feb.	900	792,962	193,020	1,057,003	163,124	211,534	30,092	384,547	48,678	838,097	79.3	218,906	107,567	92,008	175,916
	2 mos.	900	1,771,912	415,677	2,334,566	363,167	431,981	61,328	783,024	99,017	1,739,497	74.5	595,069	426,610	389,714	272,155
Houston, East & West Texas	Feb.	191	209,618	29,930	252,801	49,954	39,829	3,925	78,221	9,919	181,729	71.9	71,072	49,129	26,040	28,670
	2 mos.	191	425,365	65,142	518,192	80,364	84,141	8,154	157,742	20,099	350,169	67.6	168,023	132,113	86,166	60,742
Louisiana Western	Feb.	207	198,113	76,499	295,560	37,374	64,888	16,598	93,932	19,788	235,088	79.5	60,472	33,265	25,199	44,483
	2 mos.	207	419,874	159,064	621,797	80,760	128,481	32,668	197,155	39,664	484,822	78.0	136,975	83,787	64,756	89,102
Morgan's L. & T. R. R. & S. S. Co.	Feb.	400	446,601	122,284	619,113	120,074	141,191	25,206	277,850	36,514	606,149	97.9	12,964	—41,929	—70,943	—110,472
	2 mos.	400	927,176	249,118	1,282,631	282,678	290,677	49,527	575,080	73,748	1,282,333	100.0	298	—109,373	—167,988	—127,626
Texas & New Orleans	Feb.	569	553,239	139,807	750,252	113,237	176,549	17,126	272,283	36,644	619,702	82.6	130,550	99,124	63,844	—103,882
	2 mos.	569	1,208,185	288,488	1,623,964	251,043	386,739	34,416	654,816	74,496	1,408,587	86.7	215,377	134,891	44,314	8,065
Spokane, Portland & Seattle	Feb.	554	453,537	78,017	577,235	83,323	90,196	9,613	180,887	25,475	393,670	68.2	183,565	104,299	95,116	89,342
	2 mos.	554	867,789	175,469	1,145,953	148,047	180,624	18,796	382,711	49,240	789,081	68.9	356,872	198,363	183,834	180,283
Tennessee Central	Feb.	296	201,652	23,388	240,331	50,343	41,124	8,943	97,983	11,740	209,839	87.3	30,492	25,700	11,904	21,205
	2 mos.	296	390,157	48,558	467,857	111,209	87,365	17,112	199,775	28,340	443,481	94.8	24,376	14,883	—12,044	31,385
Term. R. R. Assn. of St. L.	Feb.	55	.....	.....	1,086,779	152,540	83,698	2,074	441,001	20,841	703,631	64.7	383,148	280,768	353,592	364,884
	2 mos.	55	.....	.....	2,253,558	269,760	184,199	4,719	936,134	41,800	1,443,697	64.1	809,861	595,128	747,137	719,377
Texas Mexican Ry.	Feb.	162	103,998	7,732	121,860	27,067	26,920	4,079	49,105	5,704	112,875	92.6	8,985	3,985	—3,771	19,598
	2 mos.	162	210,289	15,099	243,931	61,723	51,205	8,044	100,185	11,639	232,713	95.4	11,218	1,218	—15,247	40,709
Toledo, Peoria & Western	Feb.	248	115,937	7,892	132,483	23,921	21,306	6,013	57,692	7,066	115,998	87.6	16,485	8,977	2,730	—10,101
	2 mos.	248	230,120	16,833	265,950	51,607	39,790	12,997	123,839	14,287	242,502	91.2	23,448	8,440	—6,444	—26,316
Trinity & Brazos Valley	Feb.	367	211,325	7,958	226,231	47,151	33,774	5,127	107,652	12,157	200,114	88.5	26,117	18,865	—3,888	—55,781
	2 mos.	367	463,320	18,159	495,915	111,052	74,241	10,622	239,405	24,459	450,088	90.8	45,827	31,113	—25,975	—126,828
Ulster & Delaware	Feb.	128	23,884	4,221	56,352	13,856	14,414	1,354	35,652	5,765	71,041	126.1	—14,689	—20,439	—21,852	—27,162
	2 mos.	128	49,768	10,755	115,385	29,291	28,051	2,700	75,660	12,004	147,706	128.0	—32,321	—43,821	—47,528	—51,462
Union R. R. of Penna.	Feb.	45	.....	.....	754,678	77,049	180,353	149	381,686	12,362	651,512	86.3	103,166	83,166	162,487	45,531
	2 mos.	45	.....	.....	1,472,145	149,533	377,943	325	797,980	23,843	1,349,537	91.7	122,608	92,608	248,872	181,136
Union Pacific	Feb.	3,714	5,439,422	999,641	7,062,226	576,487	1,584,825	148,876	2,085,167	302,093	4,831,646	68.4	2,230,580	1,521,315	1,439,553	1,358,210
	2 mos.	3,714	10,994,134	2,166,788	14,443,901	1,185,362	3,234,265	296,649	4,462,249	618,387	10,075,153	69.8	4,368,748	2,949,861	2,760,349	2,880,543
Oregon Short Line	Feb.	2,537	2,018,058	297,024	2,488,170	263,906	435,546	46,415	765,254	115,308	1,673,472	67.3	814,698	559,268	509,661	291,915
	2 mos.	2,537	4,005,344	632,974	4,989,030	537,215	883,700	89,796	1,608,569	234,831	3,450,799	69.2	1,538,231	1,027,284	922,574	720,444
Oregon, Wash. R. R. & Nav. Co.	Feb.	2,237	1,512,726	256,578	1,938,198	261,403	316,663	71,071	770,817	120,022	1,564,148	80.7	374,050	189,727	102,337	77,163
	2 mos.	2,237	2,927,024	551,727	3,819,290	513,945	697,222	134,136	1,623,307	234,450	3,256,090	85.3	563,200	194,512	22,284	104,433
Los Angeles & Salt Lake	Feb.	1,208	1,342,037	298,229	1,796,497	357,283	451,373	83,985	638,666	69,068	1,677,595	93.4	118,902	—13,683	—109,331	28,812
	2 mos.	1,208	2,781,421	668,045	3,775,434	702,356	843,378	171,748	1,299,959	143,256	3,316,899	87.9	458,535	192,740	4,008	—42,805
St. Joseph & Grand Island	Feb.	258	211,812	13,221	239,581	26,124	34,518	2,927	89,064	14,795	167,428	69.9	72,153	53,827	44,272	53,206
	2 mos.	258	432,661	27,278	489,815	58,008	79,663	5,849	183,008	29,619	356,147	72.7	133,668	98,289	76,704	128,761
Utah	Feb.	111	157,325	.....	157,358	25,302	40,625	359	31,549	6,736	104,571	66.5	52,787	39,345	34,041	28,961
	2 mos.	111	351,052	36	353,386	43,141	76,747	789	68,593	13,265	202,535	57.3	150,851	123,968	108,026	71,649
Virginian	Feb.	545	1,739,959	55,406	1,909,858	196,918	356,170	14,646	372,990	33,662	962,786	50.4	947,072	781,969	844,062	719,953
	2 mos.	545	3,741,173	122,340	4,088,112	399,608	708,297	29,537	798,177	67,246	1,990,752	48.7	2,097,360	1,767,152	1,884,527	1,434,756
Wabash	Feb.	2,524	4,428,062	604,536	5,391,449	606,720	961,351	163,128	2,187,157	170,619	4,095,000	76.0	1,296,449	1,013,948	697,345	707,081
	2 mos.	2,524	8,696,003	1,286,699	10,706,458	1,178,322	1,967,005	319,614	4,508,821	342,496	8,328,123	77.8	2,378,335	1,833,300	1,242,066	1,397,300
Ann Arbor	Feb.	293	441,396	18,973	471,570	41,853	87,975	12,608	195,525	10,054	347,778	73.7	123,792	99,891	84,366	61,692
	2 mos.	293	817,531	44,454	888,608	91,502	179,586	25,060	385,882	21,999	703,252	79.1	185,356	138,224	99,493	153,759
Western Maryland	Feb.	804	1,753,980	40,180	1,855,316	258,137	386,596	35,038	572,933	43,329	1,304,522	70.3	550,794	450,794	465,267	415,481
	2 mos.	804	3,684,330	87,213	3,895,931	521,092	825,253	73,352	1,207,469	90,548	2,726,608	70.0	1,169,323	969,323	947,542	863,706
Western Pacific	Feb.	1,042	785,825	84,185	913,905	155,524	210,739	40,526	380,383	37,501	840,526	92.0	73,379	—50,787	21,329	207,922
	2 mos.	1,042	1,643,871	169,374	1,907,462	299,767	422,170	79,899	774,938	87,459	1,678,264	88.0	229,198	—18,761	144,523	475,172
Wheeling & Lake Erie	Feb.	511	1,425,217	30,623	1,536,793	151,841	365,894	32,920	473,627	37,189	1,063,231	69.2	473,562	337,503	314,664	270,622
	2 mos.	511	2,784,183	67,580	3,007,606	313,991	752,381	65,410	971,461	76,537	2,183,430	72.6	824,176	561,117	540,671	528,349

News of the Week

(*Continued from page* 1145)

eliminations which has been lacking up to this time. Under the new arrangement the Department of Public Works will originate a grade crossing elimination program (outside the cities of New York, Buffalo and Syracuse) and will present this on or before a fixed date to the Public Service Commission. The Public Service Commission, after hearings, will prepare a plan of eliminations to be carried out in the course of the ensuing year. The Public Works Department will supervise the work outside of Buffalo, Syracuse and New York. Municipalities and the state highway authorities may include in grade crossing eliminations additional work, for which payment will be made out of other than grade crossing funds."

C. P. R.'s Position in Freight Handlers' Wage Case

A further statement of its position in the application of the clerks, freight handlers and station employees for higher wages has been issued by the Canadian Pacific at Montreal as follows in part:

"The company has offered substantial increases in rates of pay to its clerks, freight handlers and station employees, included within the scope of the agreement which has been under negotiation, and believes that when the employees concerned have been advised of the conditions their sense of fairness will cause them to take a different view from that of their organization.

"In its desire to go as far as possible to maintain good relationships with the employees, the company offered to grant increases in rates of pay of three cents per hour to clerks and checkers, and two cents per hour to truckers. The representatives of the employees agreed to accept three cents per hour for clerks, checkers and truckers. Clerks and checkers represent slightly over 70 per cent of the employees affected, so that for that large percentage of the employees their representatives and the company are in agreement. For the truckers, representing approximately 30 per cent of the total number of employees involved, the company offered an increase of two cents per hour. The company also offered the option of an increase of 2½c. per hour to all classes. Truckers are already receiving rates of pay in excess of what is generally paid for similar classes of work either in or outside of railway service. Other classes of employees, representing more than ten times the number of truckers involved, performing work quite as important as that of truckers, and who in recent years have not received any more favorable treatment, have recently closed agreements with the company for the revision of their rates of pay on the basis of increases of two cents per hour. Truckers have received in recent years increases in their rates of pay which are extreme, and it might be argued with some justification that they should not now receive any further increase. To take a case in point: the truckers in the Place Viger freight sheds at Montreal, where there are probably as many truckers employed as at any freight shed in the country. Since 1914, these truckers have had their rate of pay per hour increased 152.6 per cent. They are now working eight hours per day as compared with ten hours per day in 1914, and their rate of pay per day, even working two hours less per day to earn it, has increased 102.1 per cent. During the same period the cost of living, according to official government figures, has increased approximately 50 per cent, while the company's earnings per unit of service performed have increased less than 30 per cent."

Florida On Exhibition

The Florida exposition trains, carrying displays of agricultural, industrial and other resources of Florida for exhibition in northern cities, planned some months ago, were finally started from Jacksonville on March 16. There are three trains, one traveling northward along the Atlantic Coast, one to the central states and one to other regions. The first train, which consists of four cars, colored on the exterior in orange and green, made stops at Savannah, Wilmington, Washington and other places and reached New York city on April 6. The second and third trains were in Atlanta, Ga., together, on March 17 and 18, where they were visited by 10,000 persons.

Bird M. Robinson, president of the American Short Line Railroad Association, is the leading spirit in the Florida Exposition Company and from his headquarters in Washington, D. C., he directs the movements of the exhibition trains while they are on tour.

Operating Statistics—Canadian Railways*

Twelve Months Ended December 31, 1926, *Compared with Year* 1925

Operating Statistics	Canadian National		Canadian Pacific		[2] Total—All Roads	
	1926	1925	1926	1925	1926	1925
Average miles of road operated	20,796.10	20,596.21	13,863.0	13,678.3	39,148.68	38,772.35
No. of tons carried (rev. fr.)	48,164,331	43,911,107	34,336,191	34,589,533	118,992,123	108,890,856
No. of tons carried one mile (rev. fr.)	16,629,018,817	15,593,387,347	13,842,580,786	13,067,430,516	34,050,077,167	31,887,977,323
No. of tons carried one mile (all fr.)	18,611,295,151	17,272,726,300	15,901,484,316	14,876,934,763	38,193,747,296	35,465,672,628
Gross ton miles, excl. of loco. and tender	41,582,276,745	38,377,617,180	34,275,868,405	32,240,707,035	86,277,312,728	79,743,104,507
No. of revenue pass. carried	20,589,208	20,654,606	13,505,863	13,581,691	40,274,072	40,307,912
No. of revenue pass. carried one mile	1,329,525,253	1,272,042,814	1,254,450,356	1,249,985,831	2,962,713,022	2,887,239,955
[1] Freight train miles	30,827,561	29,036,414	26,539,649	24,801,421	65,112,818	60,751,841
[1] Passenger train miles	22,284,215	21,398,455	19,665,999	19,663,408	48,019,088	46,968,415
Total train miles (rev. and non-rev.)	55,545,045	52,419,240	47,227,625	45,381,577	117,519,877	111,019,344
Freight car miles-loaded	738,007,852	680,302,474	594,282,933	558,572,048	1,523,049,391	1,411,924,731
Freight car miles-empty	368,390,464	347,229,798	285,099,095	272,966,418	759,628,801	712,524,455
Passenger train car miles	158,300,599	153,886,769	147,914,198	144,334,658	352,307,171	340,020,346
Total amount of payroll	$129,571,848	$123,119,869	$90,742,690.54	$85,259,672.81	$240,617,780.38	$228,228,157.84
Number of employees	88,849	84,926	60,215	57,825	162,190	155,766
Daily Averages per Mile of Road Operated						
Operating revenue	$29.71	$27.70	$39.06	$36.58	$34.16	$31.83
Operating expenses	$25.05	$24.53	$29.59	$28.17	$26.92	$25.95
No. of tons moved one mile (rev. fr.)	2,191	2,074	2,736	2,617	2,383	2,253
No. of tons moved one mile (all fr.)	2,452	2,298	3,143	2,980	2,673	2,506
No. of rev. pass. carried one mile	175	169	248	250	207	204
[1] Average per Freight Train Mile						
Freight revenue	$5.38	$5.19	$5.26	$5.11	$5.42	$5.28
No. of tons of freight (rev. fr.)	539.4	537.0	521.6	526.9	522.9	524.9
No. of tons of freight (all fr.)	603.7	594.9	599.2	599.8	586.6	583.8
Gross ton miles	1,348.9	1,321.7	1,291.6	1,400.0	1,325.0	1,312.6
Loaded freight cars	23.9	23.4	22.4	22.5	23.4	23.2
Empty freight cars	12.0	12.0	10.7	11.0	11.7	11.7
[1] Averages per Passenger Train Mile						
Passenger train revenues	$2.42	$2.43	$2.41	$2.34	$2.43	$2.38
Passengers carried	59.7	59.4	63.8	63.6	61.7	61.5
Passenger cars	7.1	7.2	7.5	7.3	7.3	7.2
Average operating expenses per train mile	$3.42	$3.52	$3.17	$3.10	$3.27	$3.31
Average length of haul (rev. fr.), miles	345.3	355.1	403.1	377.8	286.2	292.8
Average passenger journey, miles	64.6	61.6	92.9	92.0	73.6	71.6
Average tons per loaded freight car mile	25.2	25.4	26.8	26.6	25.1	25.1
Av. fr. receipt per rev. ton mile	.997¢	.966¢	1.008¢	.970¢	1.036¢	1.006¢
Av. passenger receipt per pass. per mile	2.609¢	2.623¢	2.708¢	2.635¢	2.704¢	2.682¢
Ratio of payroll to operating revenues	57.4%	59.1%	45.7%	46.7%	49.3%	50.7%
Ratio of operating expenses to revenues	84.32%	88.55%	75.75%	77.03%	78.79%	81.50%

[1] Contains a proportion of mixed train miles.
[2] I. E., all roads with annual operating revenues in excess of $500,000.
* *Compiled by Dominion Bureau of Statistics, Ottawa.*

Traffic

Representatives of railroads and shippers met with the Traffic Bureau of the Interstate Commerce Commission on April 4 to consider a tentative revision of the commission's Tariff Circular No. 20-a, which contains the regulations governing the construction and filing of freight tariffs.

The New York State Canals will be opened for business on April 10, except the Champlain canal which is now undergoing repairs and will not be opened until after April 15. April 10 is the earliest date of opening in the history of the state, ice usually preventing the beginning of navigation before May 1. Contracts were recently let for dredging from Lock 7 to Frankfort at a cost of about $250,000. A contract has already been let for rip-rapping the canal banks at various locations between Crescent and Frankfort.

"Washington, the Nation's Capital" is the title of a booklet which has been issued by the passenger department of the Southern, advertising the beauties of the capital by means of 25 sketches from drawings by E. H. Suydam, showing the more notable buildings, including the Pan-American building, the Chamber of Commerce of the United States, and several others of the more recent structures. Not the least attractive feature of the pamphlet is the short and succinct descriptive matter shown under each picture, the general text of the book likewise being very brief.

D. O. Moore, chairman of the Allegheny Regional Advisory Board, had issued a statement, based on reports of commodity committees, showing the expectations of traffic in the different commodities in the Allegheny region for the second quarter of 1927, as compared with last year. On coal and coke, it is difficult to make satisfactory predictions, but on nearly all other commodities, considerable increases are expected. Brick and other building materials are entered in the lists from four to ten per cent; iron and steel articles, four to six per cent; iron ore (from the mines) 15 per cent; leather, ten per cent; petroleum products, 11 to 14 per cent.

The "Corn Borer Special" consisting of two cars, manned and equipped for instruction of farmers, is being run over the lines of the Pennsylvania in Indiana, the road co-operating with the Indiana department of agriculture and Purdue University. The corn borer, which was said to have been imported from Europe in 1910, is threatening the corn crop in many states and its ravages are said to be alarming. The Detroit, Toledo & Ironton has furnished farmers along its lines with a large number of 10 ft. sections of old rails which are used by the farmers to destroy the eggs of the worms. The rail, dragged along on the ground by a tractor, breaks up or crushes the corn stubble and thus works destruction to the dormant larvae.

Economy in Unloading Sheet Steel

The Ford Motor Company, Detroit, carrying out the plans of its engineers, is using a simple and inexpensive system of unloading sheet steel from freight cars, the principal instrumentalities being "midget lift dollies" and a simple crane. From illustrations which are shown in the D. T. & I. Railroad News, it appears that flat sheets, of a size convenient to load in box cars, are packed in the cars in piles not more than 10 in. high. Each pile rests on three or four wooden stringers 4 in. square, the weight of the piles being sufficient to make this arrangement satisfactory without nailing. The dollies or small rollers are slid beneath the piles. By suitable levers, one man can easily raise from three to five tons; and, with the rollers adjusted, the pile is readily moved to the car door. The skids extending from car to platform are made of strips of steel. Three men unload 50 tons in about one hour.

Freight Commodity Statistics for 1926

Class I railroads in 1926 carried 2,452,786,401 tons of freight, an increase of 6.45 per cent as compared with the tonnage for 1925, according to the Interstate Commerce Commission's summary of freight commodity statistics for 1926 and the last quarter for the year. All groups of commodities showed increases except forest products, which showed a decrease of 4.17 per cent. Products of mines showed an increase of 10.4 per cent, which was the largest increase for any group. The number of tons originating showed an increase of 7.16 per cent, while decreases were shown in animals and products, products of forests, and l. c. l., freight.

For the last quarter of the year the tons carried amounted to 660,750,636, an increase of 8.34 per cent as compared with the corresponding quarter of 1925.

The table is a comparison, by general groups of commodities, of the tonnage transported during the fourth quarter in 1926, with the corresponding period in 1925, also a comparison of the cumulative figures for the year ended December 31.

Shippers Fined $6,000 for Underbilling

Two long-pending suits in which the government prosecuted shippers for misrepresentation of weights in shipments of fish, have been settled in the federal court at Boston by the imposition of fines amounting to $6,000 on the Harlem & Morrisania Transportation Line, Inc., of New York, and by the withdrawal of the suit against Lincoln H. Young, a freight forwarder of Boston. The grand jury returned two indictments of 20 counts each, against Young and against the Harlem & Morrisania Transportation Line, Inc., a forwarder of New York City, covering carload shipments forwarded to New York over the New York, New Haven & Hartford from Provincetown, Mass., and from Boston. The indictments charged that Young furnished shipping orders which showed weights lower than actual, and that the Harlem & Morrisania Transportation Line accepted illegal concessions in that it paid freight charges based on false weights, known to be false. The offenses on which these suits were based were committed some two or three years ago.

Three Months and Twelve Months Ending December 31

Groups of Commodities	Number of tons originated: Quarter ended Dec. 31, 1926	Quarter ended Dec. 31, 1925	Per cent of increase or decrease
Products of agriculture	36,896,767	37,753,683	D 2.32
Animals and products	7,359,277	7,382,758	D .32
Products of mines	211,562,242	172,168,102	I 22.88
Products of forests	24,434,284	24,913,612	D 1.96
Manufactures and miscellaneous	70,392,190	71,174,246	D 1.11
All l. c. l. freight	10,001,859	10,386,519	D 3.85
Total	360,646,619	323,778,920	I 11.39
	Total tons carried		
Products of agriculture	68,860,739	71,184,644	D 3.37
Animals and products	12,860,604	12,909,501	D .38
Products of mines	375,325,101	318,295,524	I 17.92
Products of forests	47,797,717	49,606,919	D 3.79
Manufactures and miscellaneous	138,348,933	139,781,803	D 1.04
All l. c. l. freight	17,557,542	18,117,947	D 3.19
Total	660,750,636	609,896,338	I 8.34
	Number of tons originated: Year ended Dec. 31, 1926	Year ended Dec. 31, 1925	Per cent of increase or decrease
Products of agriculture	111,787,179	109,313,068	I 2.26
Animals and products	26,244,068	26,323,842	D .30
Products of mines	758,064,458	678,336,071	I 11.75
Products of forests	104,858,549	107,391,084	D 2.42
Manufactures and miscellaneous	296,075,910	285,290,606	I 3.78
All l. c. l. freight	39,497,628	40,586,944	D 2.76
Total	1,336,527,792	1,247,241,615	I 7.16
	Total tons carried		
Products of agriculture	222,428,819	215,124,520	I 3.40
Animals and products	46,824,330	46,314,799	I 1.10
Products of mines	1,338,093,897	1,212,013,894	I 10.40
Products of forests	201,670,174	210,076,838	D 4.17
Manufactures and miscellaneous	575,472,495	552,543,934	I 4.15
All l. c. l. freight	68,296,686	68,200,761	I .14
Total	2,452,786,401	2,304,274,746	I 6.45

Equipment and Supplies

Locomotives

THE MONONGAHELA RAILWAY is inquiring for six Mikado type locomotives.

THE FORT SMITH, SUBIACO & ROCK ISLAND is inquiring for one consolidation type locomotive.

THE AMERICAN METAL COMPANY OF MEXICO is inquiring for one six-wheel switching locomotive.

THE DELAWARE, LACKAWANNA & WESTERN is inquiring for 10 Mountain type freight locomotives and 5 Mountain type passenger locomotives.

THE BOSTON & MAINE is inquiring for 10 eight-wheel switching locomotives. This is in addition to an inquiry for 25 freight locomotives reported in the *Railway Age* of February 5.

THE YOUNGSTOWN & NORTHERN has ordered two six-wheel switching locomotives from the American Locomotive Company. Inquiry for this equipment was reported in the *Railway Age* of February 5.

Freight Cars

THE CHICAGO GREAT WESTERN is inquiring for five caboose cars.

THE ILLINOIS CENTRAL expects to inquire soon for 4,000 to 5,000 freight cars.

THE DELAWARE, LACKAWANNA & WESTERN is inquiring for 500 box cars and 300 coal cars.

THE NEW YORK CENTRAL, in addition to its inquiry for 3,500 freight cars, reported in the *Railway Age* of April 2, is contemplating the purchase of about 4,500 freight cars, including flat cars and 30 caboose cars.

Passenger Cars

THE DELAWARE, LACKAWANNA & WESTERN is inquiring for 20 milk cars, 10 express cars and 2 combination mail and baggage cars.

Iron and Steel

THE BOSTON & MAINE is inquiring for 600 tons of steel.

THE SOUTHERN RAILWAY is inquiring for 1,000 tons of steel.

THE NEW YORK CENTRAL is inquiring for 150 tons of steel for bridges.

THE CHESAPEAKE & OHIO is inquiring for 1,200 tons of steel for bridges.

THE BANGOR & AROOSTOOK has placed an order for 200 tons of bridge steel.

THE ERIE has ordered 150 tons of steel for bridges from the American Bridge Company.

THE BALTIMORE & OHIO is inquiring for 125 tons of steel for a bridge at Upland, Pa.

THE FLORIDA EAST COAST has placed an order for 400 tons of steel for a bridge at Miami, Fla.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for 3,000 tons of structural steel for a machine shop at Cleburne, Texas.

THE PENNSYLVANIA is inquiring for 7,000 kegs of spikes, 800 kegs of bolts, 1,500 tons of angle bars and 1,100 tons of tie plates.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered 125 tons of structural steel for a bridge at Fritch, Texas, from the Austin Bridge Company.

THE PENNSYLVANIA has given a contract for 145 tons of steel for a store and commissary building at Sunnyside Yard, N. Y., to the Easton Structural Steel Company. The Pennsylvania is inquiring for 300 tons of steel for three bridges.

Machinery and Tools

THE NORTHERN PACIFIC is inquiring for one car wheel grinding machine.

THE TEXAS & PACIFIC has ordered a 6,000-lb. double frame steam hammer from the Niles-Bement-Pond Company.

THE ELGIN, JOLIET & EASTERN is inquiring for two 20-in. all-geared drills, one grinding machine, one turret lathe and one pipe bending machine.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS has ordered a pneumatic spring bander and pneumatic spring former from Joseph T. Ryerson & Son, Inc.

Signaling

THE PACIFIC ELECTRIC has ordered from the Union Switch & Signal Company a mechanical interlocking, 19 working levers, for Bell Station, Cal.

THE LOUISVILLE & NASHVILLE has ordered from the Union Switch & Signal Company electric interlocking for Louisville, Ky., the machine to have 30 levers.

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company electro-mechanical interlocking, 11 mechanical levers and 10 electric, for Bulger, Pa.; also a similar machine for Burgettstown, Pa., 14 mechanical and 15 electric levers.

THE READING has ordered from the Union Switch & Signal Company, 16 locomotive equipments for freight engines which run over the tracks of the Baltimore & Ohio between Philadelphia, Pa., and Wilsmere Yard, Del., where the Union intermittent inductive automatic train stop system is in use.

THE LONG ISLAND has contracted with the Union Switch & Signal Company for the installation of position-light signals on its line between Jamaica, N. Y., and Harold Avenue, 8 miles; some four track and some six track. The contract includes 64 automatic signals and 12 interlocking signals (Tower WJ).

THE ST. LOUIS-SAN FRANCISCO has placed an order with the National Safety Appliance Company for the automatic train control apparatus necessary to equip 38 additional locomotives for operation through its train control territory, from Nichols, Mo., to Afton, Okla. The order also includes the same number of forestalling valves to complete the installation of the permissive feature on locomotives so equipped.

THE MISSOURI PACIFIC plans the installation of automatic block signals on 230 miles of line during 1927, involving a total expenditure of $1,140,000. This program includes the sections of line between Bald Knob, Ark., and Memphis, Tenn., 91 miles; between Bald Knob, Ark., and Little Rock, 56 miles; between Benton, Ark., and Hot Springs, 31 miles, and between Benton and Little Rock, 23 miles. On the 29 miles of new second track between St. Louis, Mo., and Kansas City, existing signals will be revised and new signals will be added.

Miscellaneous

THE CONSERVATION COMMISSION OF THE STATE OF NEW YORK, Albany, is inquiring for one fish distribution car.

Domestic Railway Purchases of Locomotives, Freight Cars, Passenger Cars, Structural Steel and Rails

	Locomotives		Freight Cars		Passenger Cars		Structural Steel		Rails	
	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926
January	26	60	17,196	11,531	314	217	6,417	6,845	29,000	20,000
February	85	13	4,135	11,353	246	152	620	5,998	68,500	46,200
March	70	407	5,255	8,772	212	112	12,150	12,010	.....	.....
Total three months	181	480	26,634	31,656	772	481	19,187	24,853	97,500	66,200

Supply Trade

The **Pullman Car & Manufacturing Corporation** has purchased a controlling interest in the **Dickson Car Wheel Company,** Houston, Texas.

The Pittsburgh office and laboratories of the **Robert W. Hunt Company** have been removed from the Monongahela Bank building to the Professional building, Pittsburgh, Pa.

Wilber Hattery has been appointed vice-president of the **Mickle Timber & Lumber Company,** Portland, Ore., with headquarters at Chicago.

The **Equipment Sales Corporation,** Railway Exchange building, St. Louis, Mo., has been appointed sales representative in that territory for the **Flannery Bolt Company,** located at Pittsburgh, Pa.

W. S. Hovey, vice-president and general manager of **Fairbanks, Morse & Co.,** Chicago, has been elected president to succeed **C. H. Morse,** who has been elected chairman of the board. Mr. Hovey was born in 1875 and after graduating from Cornell University entered the employ of the Sheffield Car Company, an affiliated company, in 1902 as assistant superintendent. Later he became superintendent, which position

W. S. Hovey

he held until 1913, when he was transferred to the Beloit works of Fairbanks, Morse & Co. as manager of the engine division. In the same year he was appointed general manager of that plant. In 1919 he was elected vice-president in charge of all the manufacturing activities of Fairbanks, Morse & Co., and in 1924 was made general manager of the entire business, which position he has held until his recent election.

Thomas L. Mount, for the past four years manager of the car lighting department of the Electric Storage Battery Company, at Philadelphia, Pa., has established the firm of **The Thomas L. Mount Company,** with headquarters at 136 Liberty street, New York City, for the purpose of servicing and selling electrical supplies to the railroads. The new company will handle a.c. and d.c. motors made by the Electro-Dynamic Company, Bayonne, N. J., and car lighting axle pulleys made by the American Pulley Company, Philadelphia, Pa. The Thomas L. Mount Company is also supplying belting known as Paramount car lighting belt and at a later date will offer other electrical equipment and welding appliances. Mr. Mount was

T. L. Mount

first associated with railroad activities with the Consolidated Axle Light Company. He served as draftsman, machinist, assistant chief engineer and vice-president of the company. In 1919, he became associated with the Electro-Dynamic Company, makers of Consolidated car lighting equipment since 1901. Later in 1919 he went with the Electric Storage Battery Company and was made manager of its car lighting department in 1923, which position he held until the early part of this year. Mr. Mount is a past president of the Railway Electrical Supply Manufacturers' Association.

J. G. Carruthers, sales manager of the **Otis Steel Company,** Cleveland, Ohio, has been elected vice-president. **G. A. Paine** has been appointed treasurer, to succeed **L. Kemper,** resigned. **J. W. Carpenter** has been appointed assistant secretary-treasurer.

A. R. Chalker, chief draftsman of the **Locomotive Stoker Company,** Pittsburgh, Pa., has been appointed mechanical engineer with headquarters at Pittsburgh, to fill the vacancy caused by the recent death of L. E. Osborne. Mr. Chalker received his education at Boardman Manual Training High School and his technical training at Yale University, having been graduated from Sheffield Scientific School with the mechanical engineering class of 1906. Mr. Chalker was formerly employed by the Baldwin Locomotive Works and the General Electric Company. In 1911 he entered the employ of the Locomotive Stoker Company and was appointed chief draftsman in 1916. **C. R. Davison,** who has been

A. R. Chalker

doing special engineering and designing work in the engineering department of the Locomotive Stoker Company since 1917, has been appointed chief draftsman, at Pittsburgh, to succeed Mr. Chalker.

Charles R. Long, Jr., president of the Okadee Company and the Chas. R. Long, Jr., Company, also has been elected president of the **Viloco Railway Equipment Company. M. H. Oakes,** formerly representative of the National Refining Company, with headquarters at Chicago, has been elected vice-president of the **Chas. R. Long, Jr., Company,** the **Okadee Company** and the **Viloco Railway Equipment Company. G. E. Johnson,** assistant secretary of

C. R. Long, Jr.

Viloco Railway Equipment Company and the **Okadee Company,** has been appointed secretary of these two companies. Mr. Long was born at Louisville, Ky., and in 1888 entered business as secretary and treasurer of the Stratler Bros. Tobacco Company, Louisville, Ky., which position he held from 1890 to 1896. In the latter year he organ-

ized the Chas. R. Long, Jr., Company to manufacture railway paint. In 1909 he also became one of the organizers of Harry Vissering & Company. In 1913 he was one of the founders of the Okadee Company and later became one of the incorporators of the Viloco Machine Company. Mr. Oakes served his apprenticeship as a railroad machinist on the Norfolk & Western and was ap-

M. H. Oakes

pointed roundhouse and division foreman on the same road in 1903. Later he became a roundhouse foreman of the Baltimore & Ohio at Washington, Ind., and was promoted from that position to master mechanic at Grafton, W. Va., in 1911. In the latter year he was appointed master mechanic of the Texas & Pacific at Big Springs, Texas, resigning to become shop superintendent of the Chicago Great Western at Oelwein, Iowa, in 1916. In 1918 he became a member of the Conference Committee of Railroad Managers and

G. E. Johnson

when this committee was abolished in 1921 he became associated with the National Refining Company in the railroad department as representative, which position he held until his recent appointment. Mr. Johnson entered business as a representative in the railroad sales department of the Crane Company, Chicago, in 1912, and resigned in 1923 to enter the employ of the Viloco Railway Equipment Company and the Okadee Company. After holding various positions with these two companies he was promoted to assistant secretary, which position he held until his recent promotion.

A. H. Elliot, for many years in the sales organization of the **American Brake Shoe & Foundry Company**, New York, has been elected a vice-president of the **Southern Wheel Company**, with headquarters at New York City. The Southern Wheel Company is a subsidiary of the American Brake Shoe & Foundry Company.

Manning, Maxwell & Moore, Inc.

John F. Schurch, who has been elected chairman of the board of Manning, Maxwell & Moore, Inc., New York, graduated from the University of Minnesota in 1893. The same year he entered the service of the Minneapolis, St. Paul & Sault Ste. Marie. He served consecutively in the office of the auditor, the general superintendent and in the transportation department, resigning the position of chief

J. F. Schurch

clerk to the vice-president in 1905. He was then associated with the Railway Materials Company, of Chicago, until February, 1914, when he was elected vice-president of the Damascus Brake Beam Company, with office in Cleveland, Ohio. The following June he was elected president of the same company, which position he resigned later in the same year and was elected vice-president in executive charge under President T. H. Symington, of the T. H. Symington Company. In June, 1922, Mr. Schurch left the Symington Company to become a vice-president of Manning, Maxwell & Moore, Inc., in charge of sales in the middle west and the west, with headquarters at Chicago. In July, 1925, he was elected president and now becomes chairman of the board. Mr. Schurch served in 1922 as president of the Railway Supply Manufacturers' Association.

Charles Arthur Moore, Jr., who was elected president of Manning, Maxwell & Moore, Inc., to succeed Mr. Schurch, was born on June 23, 1880, at Lynn, Mass. He was educated at St. Paul's School, Concord, N. H., and at Yale University, where he was a member of the class of 1903. He took part in the Balkan War with the Montenegrin army for a short period and served overseas in the World War with the Fifty-sixth Artillery as major of regimental operations and reconnaissance officer. He was almost continuously at the front from early July, 1918, until the Armistice. Since the end of the war Mr. Moore has been engaged continuously with

C. A. Moore, Jr.

Manning, Maxwell & Moore, Inc., having served as vice-president for the past three years.

John D. Nicklis, who has been elected a vice-president of Manning, Maxwell & Moore, Inc., graduated from the public school of Buffalo, N. Y., was honor military graduate at St. John's School, Manlius, N. Y., and for two years studied at Buffalo Law School. Mr. Nicklis was employed by the Brooks Locomotive Works, Dunkirk, N. Y., as timekeeper, and later was transferred to the purchasing department. He served for two years in the purchasing department of the American

J. D. Nicklis

Locomotive Company. In 1912 he was appointed manager of the mill supply department of Manning, Maxwell & Moore, Inc., and in addition to these duties was later made director of purchases of the subsidiary companies of that firm, and on March 16 was elected a vice-president. Mr. Nicklis served during the World War for two years as president of the National Supply & Machinery Dealers' Association.

Construction

Four-Million-Dollar Crossing Improvement for Elmira

The Public Service Commission of New York State has issued an order looking to the elimination of all existing grade crossings in the city of Elmira on the Pennsylvania and the Erie roads, the largest single project so far undertaken under the extensive crossing program of the State. The estimated cost is about $4,000,000. The city has agreed to pay a maximum of $1,500,000 for work, including the crossings on the D., L. & W. concerning which the Public Service Commission has not yet taken action. The present order directs the railroad companies to prepare plans and estimates, and also to carry out the work of constructing the approaches.

ALABAMA, TENNESSEE & NORTHERN.—See item in Financial News.

ATLANTIC COAST LINE.—This company has contracted with Roberts & Schaefer Company, Chicago, for the installation of a junior "N & W" type cinder handling plant at Pinners Point, Va.

BALTIMORE & OHIO.—This road is making plans for improving its terminal facilities at Philadelphia. The plans include the building of a new station at a cost of somewhere around $8,000,000. Plans also involve adjustments of street approaches and the construction of a viaduct, concerning which representatives of the road are now conferring with representatives of the city of Baltimore.

CANADIAN NATIONAL.—Bills to construct 15 branch lines in the next three years at an aggregate cost of about $20,000,000, as reported in the *Railway Age*, March 12, page 913, have passed the House and the Senate at Ottawa and been signed by the Governor General. There was little or no opposition to these measures this year, in contrast to the difficult road they had to travel in 1924.

CASTLEMAN VALLEY. — This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of 3½ miles of additional branch line from a point near Grantsville, Md., to a point near the Pennsylvania-Maryland state line.

CHICAGO & NORTH WESTERN.—This road has been authorized to construct a branch line of railroad in Butte county, South Dakota, extending from a connection with its Newell line at a point about 1.5 miles east of the station at Nisland in a general southeasterly direction a distance of approximately 12.7 miles. The cost of construction is estimated at $387,400.

CHICAGO, BURLINGTON & QUINCY.—Bids closed on April 6 for the construction of a water treating plant at Akron, Colo.

CLINTON & OKLAHOMA WESTERN.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of an extension from Cheyenne, Okla., across the Texas state line to a point near Pampa, Tex.

INDIANA HARBOR BELT.—A contract for the construction of a junior "N & W" type combined engine coaler and cinder handling plant at Argo, Ill., has been awarded to Roberts & Schaefer Company, Chicago.

MISSOURI PACIFIC.—Bids closed on April 6 for the construction of a reinforced concrete automatic electric coaling station at Osawatomie, Kan. This station will consist of two bins, one of 450 tons' capacity and the other of 100 tons' capacity.

NEW YORK, NEW HAVEN & HARTFORD.—A contract has been let to Roberts & Schaefer Company, Chicago, for the installation of two sand handling and drying plants at Lowell, Mass., and Fall River.

NORFOLK & WESTERN.—A contract has been let to the J. P. Pettyjohn & Co., of Lynchburg, Va., for the construction of buildings in the car repair yard at Portsmouth, Ohio, which it is estimated will cost around $30,000.

PENNSYLVANIA.—A contract for the construction of a simplex automatic electric coal handling plant at South Amboy, N. J., has been awarded to Roberts & Schaefer Company, Chicago.

PENNSYLVANIA.—A contract has been awarded to the W. F. Trumble & Sons Co., of Pittsburgh, Pa., for the construction of a station and express building at Uniontown, Pa., which it is estimated will cost $100,000. Plans are also being made for the construction of bridges at Massillion, Ohio, which is estimated to cost $100,000.

PITTSBURGH & WEST VIRGINIA.—A contract has been awarded to the T. J. Foley Construction Co., of Pittsburgh, Pa., for the construction of a machine shop at Rook, Pa., which is estimated at a cost of $150,000.

ST. LOUIS-SAN FRANCISCO.—This company will receive bids until April 11, for the construction of a brick and stone combined freight and passenger station at Holly Springs, Miss., which is estimated to cost about $60,000.

SOUTHERN.—The time for receiving bids for the construction of coaling stations at 10 points on the line of this railroad has been extended to April 9.

SOUTHERN PACIFIC.—Bids close on April 11 for the construction of a concrete mud shed, 800 ft. long, one mile south of Ciuzette, Ore., on the Natron cut-off on the west approach to the crossing of the Cascade mountains. This shed, which will be 25 ft. high and 17 ft. wide, will serve as a protection against landslides which have been frequent at that point. The cost is expected to be about $185,000.

Railway Finance

ALABAMA, TENNESSEE & NORTHERN.—*Extension Authorized.*—This company has been authorized by the Interstate Commerce Commission to change the proposed route of its extension to Mobile to embody a line from a point at or near Calvert, Ala., the southern terminus of the railroad, southerly to the port of Mobile, 28 miles, in place of a route previously authorized by the commission which was from Summit to Mobile, 30 miles. This will correct an error made in reporting both the name of the railroad and the authorization granted to it in Construction News in the *Railway Age* of March 26.

The purpose of the change in route is to permit a line with maximum grades of 0.5 per cent in place of long 1 per cent maximum grades on the originally authorized route; it reduces the cost by $424,000 and can be built in shorter time. The company in making its application said that it was important to open this line to Mobile at about the same time that the St. Louis-San Francisco completed its extension from Aberdeen, Miss., to Kimbrough, Ala., which will connect with the Alabama, Tennessee & Northern's present line at Aliceville, Ala. The new route of the Mobile extension is about 0.25 miles to 1.75 miles west of a line of the Southern Railway. The commission in its decision expressed the opinion that the proper solution of the Alabama, Tennessee & Northern's problem with respect to securing entrance into Mobile would be for it to acquire trackage rights over the Southern Railway between Calvert and Mobile. The Alabama, Tennessee & Northern made efforts to secure such trackage rights but was advised by the Southern that the latter was not interested in the proposition. The commission stated that "under the circumstances, therefore, and in the absence of any power in this commission to require such trackage rights" the certificate should be granted.

ATCHISON, TOPEKA & SANTA FE.—*Extra Dividend.*—Directors, meeting in New York on April 5, declared an extra dividend of 75 cents a share on the common stock in addition to the regular $1.75 quarterly dividend. This is the second quarter in succession in which an extra dividend of 75 cents has been paid. President W. B. Storey said:

"Our abnormal earnings in 1926 were contingent upon three things: First, the enormous wheat crop in Kansas; second, the huge oil production in the Panhandle field of Texas and the opening up of new wells there, and third, the fact that our road was in a position to handle the excess tonnage offered by wheat and oil. The question for 1927 lies in whether or not these results will be duplicated this year. Two excessive wheat crops in succession are rare, but not impossible. Oil production will probably not be so great in the Panhandle this year, but it will be very fair.

"The gain in earnings in the first two months of this year of more than $2,000,000, indicates the

(*Continued on page* 1172)

Annual Reports

Thirty-Third Annual Report of Southern Railway Company, Year Ended December 31, 1926.

RICHMOND, VA., March 12, 1927.

To the Stockholders of SOUTHERN RAILWAY COMPANY:

The Board of Directors submits the following report of the affairs of the Company for the year ended December 31, 1926:

Freight Traffic at New Peak.

A record-breaking volume of freight was handled, the equivalent of moving more than nine thousand million tons a distance of one mile. This was an increase of 9.06% over the previous year. Although the average revenue unit declined (1.25c per ton per mile compared with 1.291c in 1925 and with 1.531c in 1921), by reason of an increased proportion of low class tonnage, the increase in volume brought in gross earnings from freight traffic which were the largest in the Company's history: a total of $112,772,537 compared with $106,776,762 in 1925. The healthy diversification, which for years has been a characteristic of the Southern's freight traffic statements, is shown by the statistics appearing in a table accompanying this report. Particular attention is once more invited to that table in order to correct an error in respect to railroading in the South. It will be noted that raw cotton constituted but 1.73% of the total tonnage in a year when the cotton crop was of unprecedented size.

Passenger Traffic Slows Down.

On the other hand passenger traffic slowed down. The improvement noted in the annual report last year continued during the first seven months of 1926. Then began a comparative decline which continued through the remainder of the year. The passenger revenue for the period from January to July, inclusive, in 1926, was 3.51% in excess of the same period of 1925, while for the remaining five months of 1926 it was 8.47% below the same period of 1925. The striking and significant figures for the past three years are as follows:

	1926	1925	1924
Passenger Revenue from Through Traffic	$15,947,192	$15,518,351	$13,631,225
Passenger Revenue from Local Traffic	14,437,352	15,433,455	17,451,921
Totals	$30,384,544	$30,951,806	$31,083,146

The soft spot is not far to seek. The loss is in local travel which has turned to motor vehicles progressively as hard surface highways have been built by the states. From through or long distance travel the revenue in 1926 exceeded that of 1925 by $428,841. But even here there was a decrease in comparative growth, for the increase from through passenger traffic in 1925 was $1,887,126 over 1924. These last figures reflect a local condition, however: the turn of the tide in Florida travel incident to the crescent and recrescent phases of a conspicuous real estate boom which for a few months attained national significance and attracted speculative pilgrims from far and wide.

For the full year the volume of passenger traffic was the equivalent of carrying 881 million passengers one mile compared with 902 million the year before, a decrease of 2.34%.

Revenue from Other Sources Increases.

Larger demands upon the Company's facilities for carrying the mails and express parcels, switching and other miscellaneous services, resulted in a revenue from these combined sources of $12,310,895 compared with $11,585,323 in the preceding year, an increase of 6.26%.

Total Gross Revenue Exceeds Any Previous Year.

The total gross revenue derived from the operation of the railroad amounted to $155,467,976, an increase of 4.12% over the 1925 figure of $149,313,892, and 1.73% above the previous record of $152,817,410 reached in 1920.

Operating Expenses Increases Proportionately.

The increase of $6,154,084 in gross revenue was accompanied by an increase of $2,010,920 in the expense of conducting transportation. The percentage of gross revenue appropriated for this vital account in 1926 was, however, 33.36 compared with 33.38 in 1925. Normally this ratio is, of course expected to decline with an expansion of revenue. The spirited effort of the rank and file of the operating department to achieve a greater spread this year failed of realization for several reasons, among which may be mentioned the decline in passenger revenue without corresponding opportunity to reduce local passenger train mileage and the congested conditions prevailing in connection with Florida traffic during the early part of the year. Nevertheless, the transportation expense units continued to furnish evidence of advantage taken of the opportunity to reduce unit costs afforded by the large volume of traffic and the improved plant, e. g.:

The average weight of freight trains in 1926 increased 4.12% over 1925 and 7.07% over 1924.

The number of gross ton miles per freight train hour increased 4.05% over 1925 and 8.09% over 1924.

The average number of cars per freight train increased 2.86% over 1925 and 7.01% over 1924.

The average freight car loading increased 3.57% over 1925 and 4.5% over 1924.

The average daily freight car mileage increased 9.7% over 1925 and 14.5% over 1924.

Loss and damage freight claims per thousand net ton miles decreased 4.77% under 1925 and 23.22% under 1924.

The wage cost of freight train crews per thousand gross ton miles was 4.67% under 1925 and 6.95% under 1924.

Total freight train transportation expense per thousand gross ton miles in 1926 was 62.69c compared with 65.29c in 1925, a decrease of 3.98%.

The appropriations for maintenance of the plant were made with a view to keeping it in prime condition for the proper handling of a heavy volume of traffic. For maintaining the roadbed and structures $21,049,999 was expended in 1926 compared with $20,437,950 in 1925. For maintaining rolling stock $26,773,735 was expended in 1926 compared with $25,702,134 in 1925.

A fairer estimate of the effort for efficiency can be made by considering the progress of several years. The comparative requirements of the several general heads of operating expenses during the last five years, expressed in the number of cents per dollar of gross revenue required to meet them, have been as follows:

	1926	1925	1924	1923	1922
Transportation of the traffic	33.36c	33.38c	35.13c	36.32c	39.50c
Maintaining roadbed and structures	13.54c	13.69c	13.73c	13.74c	13.46c
Maintaining rolling stock	17.22c	17.21c	17.91c	19.44c	17.07c
Traffic solicitation and supervision	1.99c	1.95c	1.90c	1.93c	1.93c
General expenses	2.60c	2.60c	2.72c	2.59c	2.92c
Operating dining cars and other incidental services	.67c	.70c	.67c	.69c	.74c
Totals	69.38c	69.53c	72.06c	74.71c	75.62c

Equipment Rentals Higher.

There was an increase in the net charge against the Company for hire of equipment, this figure standing at $808,830 in 1926 compared with $151,464 in 1925. An explanation, but not an excuse, for this is in order. That explanation is found in special circumstances which may come in any year and which cannot be entirely overcome either by reasonable additions to owned equipment or by operating supervision. In 1926 the contributing causes were the congestion of Florida traffic during the early months of the year, the use of foreign cars for bituminous coal traffic moving outside of its normal channels as a result of the anthracite coal strike, and the unusually large movement of peaches and other fruits and vegetables in refrigerator cars, rental payments for the use of which are reflected in the hire of equipment account.

Taxes Continue to Climb.

The tax bill for 1926 was $10,351,100, and increase of $909,535, or 9.63%, over 1925. Being thus nearly the equivalent of the aggregate disbursement for dividends, this is a disturbing symptom. Federal and state income taxes accounted for $3,894,035 of the total and for $745,468 of the increase, while state and local property assessments accounted for $6,457,065 of the total and for $164,067 of the increase. The tax collectors took 6.7c out of each dollar of gross revenue in 1926, compared

with 6.3c in 1925, with 5.4c in 1924, with 4.6c in 1923, with 4.5c in 1922 and with 3.6c in 1921.

The steady tendency of increase of this fixed charge, over which management has no control, may fairly be said to be an element of danger in the financial outlook of the state governments as well as of this Company. During the past few years of comparative prosperity the Company's revenues have been able to bear the burden and the government budget maker has been alert to take advantage of his opportunity; but the public has now begun to realize that what is taken from a railroad for taxes in such years above a fair contribution to the support of economical government is taken, not from the stockholder, but from the fund which would otherwise be available for, and in the case of the Southern would be invested in, additions and betterments to railroad property, of which the public would be the greatest beneficiary in greater safety and facility in the movement of commerce. But in the event of a severe business depression which (absit omen!) may be expected in the cycle of commercial activity indicated by experience tables, the time may come when an annual charge of ten millions a year may be actually embarrassing even to the volume of revenues of a great railroad; and it may be fairly doubted whether the government budget maker will then be able to reef his sails as promptly as the managers of industry are trained to do. If he is not able so to do, it as not improbable that government as well as railroad may be in straits.

Interest and Rental Charges Remain Stationary.

In contrast with taxes, the fixed charges against the income which management can control have remained in substantial equilibrium. The total debit for rentals of leased railroads and for interest on bonds in 1926 amounted to $17,519,061, as compared with $17,517,651 for the preceding year.

Income from Investments Increases.

The Company's income from sources other than the operation of its railroad property, including dividends and interest on Government and corporate securities owned by it, and interest on bank balances, amounted to $5,856,954 in 1926, an increase of $582,956, or 11%, over the like income in 1925. This was largely due to increases in dividend rates by several prosperous

Table 1.—INCOME STATEMENT

Operating Revenues

	1926	1925
Freight	$112,772,537.13	$106,776,762.61
Passenger	30,384,544.16	30,951,806.32
Miscellaneous Passenger-Train	1,182,793.76	1,091,360.87
Mail	3,392,662.24	3,314,728.55
Express	2,770,968.50	2,596,008.71
Other Transportation	1,485,793.52	1,353,662.60
Incidental	2,508,376.33	2,306,593.31
Joint Facility	970,300.12	922,968.95
TOTAL OPERATING REVENUES	$155,467,975.76	$149,313,891.92

Operating Expenses

Maintenance of Way and Structures	$21,049,999.00	$20,437,949.53
Maintenance of Equipment	26,773,735.18	25,702,133.58
Traffic	3,094,112.16	2,907,511.17
Transportation	51,859,713.44	49,848,796.12
Miscellaneous Operations	1,240,075.27	1,172,412.81
General	4,050,052.95	3,871,137.59
Transportation for Investment—Credit	*201,101.32*	*127,988.92*
TOTAL OPERATING EXPENSES	$107,866,588.68	$103,811,951.88
NET REVENUE FROM OPERATIONS	$47,601,387.08	$45,501,940.04
TAXES	$10,351,100.41	$9,441,564.98
UNCOLLECTIBLE REVENUES	43,790.95	48,679.39
HIRE OF EQUIPMENT	808,829.87	151,464.37
JOINT FACILITY RENTS	868,882.81	774,209.90
TOTAL OTHER EXPENSES	$12,072,604.04	$10,415,918.64
OPERATING INCOME	$35,528,783.04	$35,086,021.40

Non-Operating Income

Income from Lease of Road	$69,853.74	$64,607.74
Miscellaneous Rent Income	283,284.15	279,311.55
Miscellaneous Non-Operating Physical Property	130,623.68	157,691.21
Dividend Income	2,704,441.92	2,143,277.00
Income from Funded Securities	1,843,423.40	1,846,102.01
Income from Unfunded Securities and Accounts	805,247.64	776,281.92
Miscellaneous Income	20,079.10	6,726.68
TOTAL NON-OPERATING INCOME	$5,856,953.63	$5,273,998.11
TOTAL GROSS INCOME	$41,385,736.67	$40,360,019.51

Deductions from Total Gross Income

	1926	1925
Rent for Leased Roads	$2,829,869.61	$2,786,202.77
Miscellaneous Rents	31,638.35	31,314.22
Interest on Unfunded Debt	75,285.41	41,936.42
Miscellaneous Income Charges	163,030.22	189,946.16
TOTAL DEDUCTIONS OF THIS CLASS	$3,099,823.59	$3,049,399.57
TOTAL AVAILABLE INCOME	$38,285,913.08	$37,310,619.94
INTEREST ON FUNDED DEBT	$12,728,630.01	$12,740,852.22
INTEREST ON EQUIPMENT OBLIGATIONS	1,734,553.08	1,764,587.59
DIVIDEND ON SOUTHERN RAILWAY—MOBILE AND OHIO STOCK TRUST CERTIFICATES	226,008.00	226,008.00
TOTAL DEDUCTIONS OF THIS CLASS	$14,689,191.09	$14,731,447.81
BALANCE OF INCOME OVER CHARGES	$23,596,721.99	$22,579,172.13
RESERVE FOR DIVIDENDS ON PREFERRED STOCK	3,000,000.00	3,000,000.00
BALANCE CARRIED TO CREDIT OF PROFIT AND LOSS	$20,596,721.99	$19,579,172.13

Table 2.—PROFIT AND LOSS

Credit Balance December 31, 1925		$85,328,655.14
Add:		
Credit Balance of Income for the Year		20,596,721.99
		$105,925,377.13
Deduct:		
Dividend of 7% on Common Stock	$8,400,000.00	
Property Retired	298,149.77	
Net Miscellaneous Debits	436,768.26	
		9,134,918.03
Credit Balance December 31, 1926		$96,790,459.10

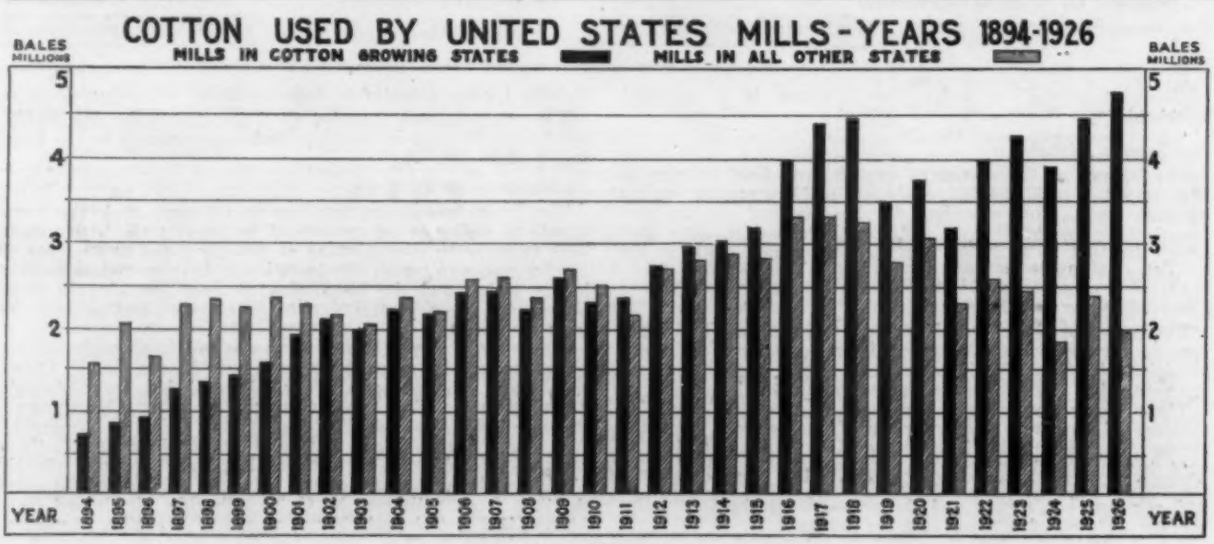

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Table 3—GENERAL BALANCE SHEET

ASSETS

Investments

	Dec. 31, 1926	Dec. 31, 1925
Investment in Road	$385,633,116.58	$377,375,960.10
Investment in Equipment	134,893,740.30	125,138,853.56
Total Investment in Road and Equipment	$520,526,856.88	$502,514,813.66
Construction Fund derived from cash paid on Common Stock subscriptions	$9,088,980.60	.....
Proceeds from sale of Mortgaged Property, held by Trustees for Reinvestment	$1,318,699.50	$886,622.45
Miscellaneous Physical Property	$1,003,159.12	$1,035,873.93
Investments in Affiliated Companies:		
Stocks	$34,824,618.89	$34,910,550.73
Bonds	23,015,148.16	24,033,970.19
Notes	3,955,394.29	3,981,117.94
Advances	2,443,427.35	2,605,057.55
Total Investments in Affiliated Companies	$64,238,588.69	$65,530,696.41
Other Investments:		
Stocks	$59,958.00	$93,809.00
Bonds	2,378,308.21	2,378,309.21
Notes	14,448.68	14,448.68
Total Other Investments	$2,452,714.89	$2,486,566.89
Total Investments	$598,648,999.68	$572,454,573.34

Current Assets

Cash	$13,809,033.51	$15,953,169.28
United States Government Securities	24,226,250.34	22,262,617.21
Special Deposits	2,880,543.55	2,840,286.05
Loans and Bills Receivable	19,391.89	21,210.05
Traffic and Car Service Balances Receivable	2,149,103.30	1,789,502.06
Balances due from Agents and Conductors	34,000.05	26,947.30
Miscellaneous Accounts Receivable	4,736,957.03	4,966,425.00
Material and Supplies (Table II)	11,649,347.37	10,771,543.01
Interest and Dividends Receivable	1,263,971.32	892,545.69
Other Current Assets	174,450.14	215,258.22
Total Current Assets	$60,943,048.50	$59,739,503.87

Deferred Assets

Working Fund Advances	$43,874.70	$57,220.79
Cash and Securities in Insurance Fund	2,484,728.39	1,377,239.98
Cash Deposited under North Carolina Railroad Lease	175,000.00	175,000.00
Other Deferred Assets	293,845.92	443,580.51
Total Deferred Assets	$2,997,449.01	$2,043,041.28

Unadjusted Debits

Insurance Premiums and Rents paid in Advance	$19,085.75	$22,973.88
Additions and Betterments Expenditures: Freight Claims: Foreign Mileage and Sundry Items in Suspense	3,532,334.86	4,118,082.86
Total Unadjusted Debits	$3,551,520.61	$4,141,056.74
Securities of the Company held by it: 1926. 1925. Unpledged $37,741,200.00 $37,741,200.00		
Grand Totals	$666,140,917.80	$638,378,175.23

LIABILITIES

Capital Stock

	Dec. 31, 1926	Dec. 31, 1925
Common	$120,000,000.00	$120,000,000.00
Receipts Outstanding for Common Stock Subscriptions paid in	9,138,300.00	.....
Preferred	60,000,000.00	60,000,000.00
Total Southern Railway Company Stock	$189,138,300.00	$180,000,000.00
Southern Ry.-Mobile and Ohio Stock Trust Certificates	$5,650,200.00	$5,650,200.00

Long Term Debt

Funded Debt	$259,213,500.00	$259,213,500.00
Equipment Trust Obligations	36,140,800.00	32,882,000.00
Total Long Term Debt	$295,354,300.00	$292,095,500.00
Total Capital Liabilities	$490,142,800.00	$477,745,700.00

Governmental Grants

Grants since July 1, 1914, in aid of Construction	$422,762.07	$480,839.34

Current Liabilities

Traffic and Car Service Balances Payable	$1,396,518.74	$1,957,181.36
Audited Accounts and Wages Payable	13,871,895.73	12,162,064.60
Miscellaneous Accounts Payable	1,638,933.83	1,558,369.71
Interest Matured, including interest due January 1st	2,854,811.30	2,812,861.50
Dividends Matured Unpaid	3,018.25	3,520.75
Funded Debt Matured Unpaid	23,064.00	24,253.80
Unmatured Dividends Accrued on Southern Ry.-Mobile and Ohio Stock Trust Certificates	56,502.00	56,502.00
Unmatured Interest Accrued	2,334,266.97	2,330,248.60
Unmatured Rents Accrued	214,875.00	214,875.00
Expenses Accrued not vouchered	1,507,036.65	1,775,891.04
Other Current Liabilities	490,033.25	1,458,105.83
Total Current Liabilities	$24,390,955.72	$24,353,874.09
Dividend Reserves	$5,100,000.00	$5,100,000.00

Deferred Liabilities

Sundry Deferred Liabilities	$3,536,157.61	$3,161,006.10

Unadjusted Credits

Taxes	$4,621,014.79	$3,829,611.59
Insurance Reserve	2,484,728.39	1,777,239.98
Operating Reserves	1,924,443.05	1,513,425.37
Depreciation accrued on:		
Equipment Owned	28,968,987.11	27,144,013.23
Equipment Leased from Other Companies	439,281.85	478,940.24
Rail Leased to Other Companies	144,918.78	155,569.54
Sundry Items	4,126,089.62	4,333,299.19
Total Unadjusted Credits	$42,709,463.59	$39,232,098.14

Corporate Surplus

Special Appropriations for Additions to Property since June 30, 1907	$3,048,319.71	$2,976,002.42
Profit and Loss—Balance	96,790,459.10	85,328,655.14
Grand Totals	$666,140,917.80	$638,378,175.23

affiliated companies in which the Southern is a principal stockholder.

Net Income Higher

The balance of the company's income over fixed charges in 1926 amounted to $23,596,722, equivalent to 17.16 per cent on the common stock, after providing for the dividend on the preferred stock, compared with $22,579,172, equivalent, after preferred dividend, to 16.31 per cent on the common stock, in the preceding year.

Dividend Disbursements Increase

The preferred dividend of 5 per cent and a dividend of 7 per cent on the common stock were paid in quarterly installments, requiring $11,400,000, an increase of $2,400,000 over the preceding year, when the rate on the common stock was 5 per cent.

These disbursements have been acclaimed by the public as evidence of exuberant prosperity, justifying demands upon the company for unprofitable investments. It is of interest, then, to note that in the 33 years of the company's history (1894-1926) the preferred stockholders have received an average dividend of 2.95 per cent per annum and the common stockholders a like average dividend of 0.48 per cent per annum.

Surplus Income Devoted to Improvements

The year's income exceeded all disbursements by $12,196,722, which was invested in additions and improvements to the company's plant.

Additions to the Property.

The improvement program during the year took the form largely of adding to the capacity of the heavy traffic single track lines through the strengthening of structures and lengthening of passing tracks to permit the operation of heavier engines hauling longer trains, and the installation of automatic electric block signals and train control devices to expedite and protect the train movement.

The work of strengthening structures and lengthening passing tracks was carried on upon the lines from Macon, Ga., to Ooltewah (near Chattanooga), Tenn., Bristol, Va., to Ooltewah, Tenn., Memphis, Tenn., to Stevenson, Ala. (near Chattanooga), Richmond, Va., to Danville, Va., Selma, Ala., to Suggsville, Ala., and Winston-Salem, N. C., to Barber Junction, N. C., a total of 995 miles. The work of installing automatic electric block signals, with train control devices, was carried on upon the lines from Salisbury, N. C., to Asheville, N. C., and from Macon, Ga., to Ooltewah, Tenn., a total of 366 miles. Improve-

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ments of this nature not only make it possible to render quicker and safer service but also tend to control the costs of operation.

A total of 320 miles of new 100-lb. rail was laid during the year, replacing 85-lb. rail.

The new equipment referred to in the report for last year, consisting of sixty-one locomotives, 2,750 freight cars and fifty passenger train cars, was received from the builders and placed in service during the year.

New Partnership Capital.

The offering of ten million dollars of new common stock to the stockholders for subscription at its par value of one hundred dollars per share to provide a part of the capital required for the improvement budget of 1927 met with a ready response from those entitled to the valuable subscription privilege.

Industrial and Agricultural Development.

The South has completed another year of constructive material progress. Evidences in support of that claim are that three hundred and sixty-two new traffic producing industries were established on Southern Railway System lines and three hundred and forty additional industrial establishments were enlarged. These industries represent ninety-four different lines of manufacturing and distribution.

Table 23.—CLASSIFICATION OF TONNAGE MOVED

Revenue Freight Only	Tons. 1926.	Tons. 1925.	Per Cent of Total Tonnage. 1926.	Per Cent of Total Tonnage. 1925.
Products of Agriculture:				
Wheat	421,510	445,164	.88	.98
Corn	220,439	193,483	.46	.43
Oats	163,076	202,384	.34	.44
Other Grain	30,291	28,252	.06	.06
Flour and Meal	398,029	410,890	.83	.90
Other Mill Products	427,579	461,539	.89	1.01
Hay, Straw and Alfalfa	272,703	252,894	.57	.56
Tobacco	272,298	286,384	.57	.63
Cotton	830,452	744,859	1.73	1.63
Cotton Seed and Products, except Oil	724,152	584,307	1.50	1.28
Citrus Fruits	127,293	116,618	.26	.26
Other Fresh Fruits	440,767	325,669	.91	.72
Potatoes	107,537	86,781	.22	.19
Other Fresh Vegetables	108,552	103,956	.22	.23
Dried Fruits and Vegetables	43,174	39,984	.09	.09
Other Products of Agriculture	92,995	87,404	.19	.19
Total Products of Agriculture	4,680,847	4,370,568	9.72	9.60
Products of Animals:				
Horses and Mules	31,851	45,960	.07	.10
Cattle and Calves	92,901	97,391	.19	.21
Sheep and Goats	5,859	6,344	.01	.01
Hogs	26,587	27,804	.06	.06
Fresh Meats	51,865	44,620	.11	.10
Other Packing House Products	98,495	91,441	.20	.20
Poultry	18,842	17,845	.04	.04
Eggs	25,405	23,747	.05	.05
Butter and Cheese	11,302	9,496	.02	.02
Wool	1,038	1,204	....	....
Hides and Leather	78,490	76,416	.16	.18
Other Products of Animals	36,144	35,777	.08	.08
Total Products of Animals	478,779	478,045	.99	1.05
Products of Mines:				
Anthracite Coal	27,966	20,517	.06	.05
Bituminous Coal	14,433,339	13,126,801	30.00	28.85
Coke	536,770	827,746	1.11	1.82
Iron Ore	130,136	152,110	.27	.33
Other Ores and Concentrates	115,735	136,737	.24	.30
Base Bullion and Matte	224	281	....	....
Clay, Gravel, Sand, and Stone	5,560,926	4,652,398	11.55	10.22
Crude Petroleum	29,456	20,355	.06	.04
Asphaltum	115,139	108,997	.24	.24
Salt	89,497	87,345	.18	.19
Other Products of Mines	245,052	318,560	.50	.70
Total Products of Mines	21,284,240	19,451,847	44.21	42.74
Products of Forests:				
Logs, Posts, Poles, and Cord Wood	1,376,878	1,281,251	2.86	2.82
Ties	523,213	376,416	1.09	.83
Pulp Wood	614,308	710,634	1.28	1.56
Lumber, Timber, Box Shooks, Staves, and Headings	4,943,441	5,091,427	10.27	11.18
Other Products of Forests	228,838	185,598	.47	.41
Total Products of Forests	7,686,678	7,645,326	15.97	16.80
Manufactures and Miscellaneous:				
Refined Petroleum and its Products	1,307,815	1,237,395	2.72	2.72
Vegetable Oils	161,901	133,249	.34	.29
Sugar, Syrup, Glucose, and Molasses	264,312	229,078	.55	.50
Boats and Vessel Supplies	556	756	....	....
Iron, Pig and Bloom	405,390	393,919	.84	.87
Rails and Fastenings	124,361	133,341	.26	.29
Bar and Sheet Iron, Structural Iron, and Iron Pipe	711,368	659,522	1.48	1.45
Other Metals, Pig, Bar, and Sheet	56,874	58,775	.12	.13
Castings, Machinery and Boilers	173,302	184,271	.36	.41
Cement	1,122,882	998,780	2.33	2.19
Brick and Artificial Stone	1,408,783	1,300,346	2.93	2.86
Lime and Plaster	364,237	351,967	.76	.77
Sewer Pipe and Drain Tile	173,925	159,078	.36	.35
Agricultural Implements and Vehicles other than Automobiles	166,279	138,813	.35	.30
Automobiles and Autotrucks	178,173	227,974	.37	.50
Household Goods and Second Hand Furniture	14,096	16,203	.03	.04
Furniture (New)	178,277	159,339	.37	.35
Beverages	17,780	21,248	.04	.05
Ice	68,664	93,082	.14	.20
Fertilizers, (all kinds)	1,156,492	1,336,153	2.40	2.94
Paper, Printed Matter, and Books	64,171	58,737	.13	.13
Chemicals and Explosives	293,035	263,642	.61	.58
Textiles	208,671	198,520	.43	.44
Canned Goods (all Canned Food Products)	97,381	98,357	.20	.22
Other Manufactures and Miscellaneous	2,668,273	2,481,257	5.54	5.45
Total Manufactures and Miscellaneous	11,386,998	10,933,003	23.66	24.03
Grand Total, Carload Traffic	45,517,542	42,878,789	94.55	94.22
Merchandise—All Less than Carload Freight	2,624,899	2,631,062	5.45	5.78
Grand Totals	48,142,441	45,509,851	100.00	100.00

[Advertisement]

Perhaps the most conspicuous growth has been in the cotton textile industry. That growth in the cotton growing states since the organization of Southern Railway Company in 1894 is graphically shown by the chart on a previous page.

It was a year of abundant harvests in the South. The following comparisons of production of certain staple agricultural commodities are compiled from reports for the states south of the Potomac and Ohio rivers and east of the Mississippi:

	1926	1925	Increase
Corn .....bushels	453,110,000	373,449,000	21%
Wheat .....bushels	32,210,000	22,933,000	40%
Oats .....bushels	51,724,000	37,306,000	39%
Apples .....bushels	41,782,000	17,588,000	138%
Peaches .....bushels	18,535,000	14,030,000	32%
Sweet Potatoes....bushels	49,670,000	36,533,000	36%
Hay .....tons	6,784,000	4,672,000	45%
Tobacco .....pounds	1,109,968,000	1,117,039,000	....

These figures connote comparative prosperity for the general farmer and the fruit grower, but as much cannot be claimed for the cotton planter. The reports of his unprecedented crop were followed by a sharp decline in the market price of raw cotton, which severely reduced the planter's expected purchasing power. All business activity in the territory suffered temporarily from that condition.

With deep regret, the Board records the death on September 16, 1926, of their esteemed colleague, Robert Jemison, Sr.

To all officers and employees who have faithfully and efficiently performed their duties during the past year the thanks of the Board of Directors again are tendered.

Respectfully submitted, by order of the Board,
FAIRFAX HARRISON, President.

Forty-Third Annual Report of the Southern Pacific Lines and Affiliated Companies, Year Ended December 31, 1926

Southern Pacific Company

REPORT OF THE BOARD OF DIRECTORS

NEW YORK, N. Y., March 31, 1927.

TO THE STOCKHOLDERS OF THE SOUTHERN PACIFIC COMPANY:

Your Board of Directors submits this report of the operations and affairs of the Southern Pacific Lines and Affiliated Companies for the fiscal year ended December 31, 1926.

Income Account

The following statements of income and of surplus show the income for the year and the accumulated surplus to the close of the year, accruing to Southern Pacific Company stock from the Transportation System and from all *separately operated Solely Controlled Affiliated Companies*, combined:

NET INCOME OF THE SOUTHERN PACIFIC LINES AND SOLELY CONTROLLED AFFILIATED COMPANIES, COMBINED, FOR THE YEAR 1926 COMPARED WITH THE YEAR 1925.

	Year Ended Dec. 31, 1926	+Increase —Decrease	Per Cent
1. Net income of Transportation System	*$38,791,373.50	+$3,133,963.25	8.79
2. Net income of Affiliated Companies	*3,243,291.25	+ 984,384.58	43.58
3. Net income or Transportation System and of all separately operated Solely Controlled Affiliated Companies, combined	*$42,034,664.75	+$4,118,347.83	10.86
4. Per cent earned on average amount of capital stock of Southern Pacific Company outstanding during the year:			
(a) From operations of Transportation System	10.42	+ .85	8.88
(b) From operations of Affiliated Companies	.87	+ .26	42.62
(c) Total	11.29	+ 1.11	10.90

*Excludes all inter-company dividends.

SURPLUS OF THE SOUTHERN PACIFIC LINES AND SOLELY CONTROLLED AFFILIATED COMPANIES, COMBINED, TO DECEMBER 31, 1926.

	Debit	Credit
1. Total corporate surplus at December 31, 1925	.....	‡$441,499,804.94
2. Corporate surplus (or deficit), at date of acquisition of companies taken over during year:		
Dayton-Goose Creek Railway Company (Surplus)	.....	434,522.20
Holton Inter-Urban Railway Company (Deficit)	$136,792.06	.....
3. Credit balance transferred from income:		
Transportation System	$37,173,181.11	.....
Affiliated Companies	3,214,861.25	..... 40,388,042.36
4. Dividends paid:		
On captial stock of Southern Pacific Company:		
1½% paid April 1, 1926	$5,585,713.58	
1½% paid July 1, 1926	5,585,713.58	
1½% paid October 1, 1926	5,585,713.58	
1½% payable January 3, 1927	5,585,713.58	
Total Southern Pacific Company	$22,342,854.32	
On capital stocks of Transportation System Companies held by the public	150.00	22,343,004.32 .....
5. Miscellaneous adjustments during the year	.....	7,268,638.47
6. Credit balance December 31, 1926	467,111,211.59	.....
	$489,591,007.97	$489,591,007.97

‡ Includes adjustment on books of Southern Pacific Railroad Company of Mexico, account cancellation of interest due to Southern Pacific Company, such interest being a part of the unearned inter-company interest to be cancelled, as explained on page 7 of last year's report, the cancellation of which was held in abeyance pending settlement of certain tax matters with the Mexican Government.

Income Account of Southern Pacific Lines

The income account of the Transportation System (Southern Pacific Company and Transportation System Companies, combined, excluding offsetting accounts and inter-company dividends) for the year 1926, compared with the year 1925, was as follows, viz.:

OPERATING INCOME

	Year Ended Dec. 31, 1926	+Increase —Decrease	Per Cent
1. Railway operating revenues	$298,800,998.06	+$5,726,444.59	1.95
2. Railway operating expenses	215,595,480.27	— 13,837.92	.01
3. Net revenue from railway operations	$83,205,517.79	+$5,740,282.51	7.41
4. Railway tax accruals	21,476,810.65	+ 201,528.63	.95
5. Uncollectible railway revenues	80,823.05	— 14,526.43	15.23
6. Equipment rents—Net	5,636,727.42	— 127,624.64	2.21
7. Joint facility rents—Net	214,438.90	+ 197,946.40	....
8. Net railway operating income	$55,796,717.77	+$5,482,958.55	10.90

NONOPERATING INCOME

9. Income from lease of road	$95,316.15	+ $13,462.71	16.45
10. Miscellaneous rent income	1,524,836.14	+ 31,153.34	2.09
11. Miscellaneous nonoperating physical property	260,960.70	— 53,503.12	17.01
12. Dividend income	†2,995,796.22	+ 214,819.56	7.72
13. Income from funded securities —Bonds and notes	3,121,177.95	— 54,388.30	1.71
14. Income from funded securities Investment advances	70,197.02	— 532,148.80	88.35
15. Income from unfunded securities and accounts	2,273,963.86	— 91,965.80	3.89
16. Income from sinking and other reserve funds	993.57703	+ 45.83907	484
17. Miscellaneous income	571,197.57	+ 34,310.81	6.39
18. Total nonoperating income	$11,907,022.64	— $392,420.53	3.19
19. Gross income	$67,703,740.41	+$5,090,538.02	8.13

DEDUCTIONS FROM GROSS INCOME

20. Rent for leased roads	$242,104.19	+ $14,224.50	6.24
21. Miscellaneous rents	774,198.04	+ 13,206.42	1.74
22. Miscellaneous tax accruals	178,731.98	— 27,968.13	13.53
23. Interest on funded debt—Bonds and notes	27,034,924.61	+ 1,699,067.90	6.71
24. Interest on funded debt—Non-negotiable debt to affiliated Companies	662.53	— 2,815.73	80.95
25. Interest on unfunded debt	228,623.78	+ 16,282.84	7.67
26. Amortization of discount on funded debt	64,211.33	+ 34,012.73	112.63
27. Maintenance of investment organization	92,413.45	+ 53,532.98	137.69

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DEDUCTIONS FROM GROSS INCOME

		Year Ended Dec. 31, 1926	+Increase —Decrease	Per Cent
28.	Miscellaneous income charges..	296,497.00	+ 157,031.26	112.59
29.	Total deductions from gross income	$28,912,366.91	+$1,956,574.77	7.26
30.	Net income	$38,791,373.50	+$3,133,963.25	8.79

DISPOSITION OF NET INCOME

31.	Income applied to sinking and other reserve funds.....	$1,413,350.86	+ $180,574.46	14.65
32.	Income appropriated for investment in physical property.	204,841.53	+ 78,172.78	61.71
33.	Total appropriations	$1,618,192.39	+ $258,747.24	19.03
34.	Income balance transferred to credit of profit and loss....	$37,173,181.11	+$2,875,216.01	8.38

† Excludes all inter-company dividends.

The causes of the principal increases and decreases in nonoperating income and in deductions from gross income are explained below, viz.:

NONOPERATING INCOME

The increase in the account Dividend Income is due, principally, to an increase of $169,632 in the dividends received on Pacific Oil Company stock, and to a dividend of a like amount, or two dollars per share, on 84,816 shares of Standard Oil Company of California stock, the said stock having been received as a partial liquidating dividend on the Pacific Oil shares owned by your Company.

The decrease of $532,148.80 in the account Income from Funded Securities—Investment Advances—was caused by the inclusion in that account last year, of interest on investment advances, which was collected last year, but which accrued prior to January 1st of last year.

DEDUCTIONS FROM GROSS INCOME

The increase of $1,699,067.90 in the account Interest on Funded Debt—Bonds and Notes—is made up, principally, as follows: Of $1,492,915, representing the difference between a full year's interest this year and the amount of interest accruing in 1925 on the $40,000,000 of Central Pacific Railway Company Thirty-five Year Five Per cent. Guaranteed Gold Bonds, and the $10,491,000 of Southern Pacific Equipment Trust Certificates—Series H, issued last year; and of $148,418, representing interest accruing this year on $5,654,000 of Southern Pacific Equipment Trust Certificates—Series I, issued this year.

The increase of $34,012.73 in the account Amortization of Discount on Funded Debt is made up, principally, of the difference between a full year's accrual this year, and the portion applicable to, and taken into the accounts, last year, of discount on the $40,000,000 of Central Pacific Railway Company Thirty-five Year Five Per cent. Guaranteed Gold Bonds, issued last year.

The increase of $53,532.98 in the account Maintenance of Investment Organization is due, principally, to expenses incurred in prior years but paid during the current year, in connection with the Oregon & California Railroad land grant controversy.

The increase of $157,031.26 in the account Miscellaneous Income Charges is due, principally, to an increase in this Company's proportion of the annual charge for amortization of investment in Associated Pipe Line, the said charge being apportioned among the three owning companies (Associated Oil Company, Standard Oil Company of California, and Southern Pacific Company) on basis of use of the pipe line.

The dividends paid for 1926 were appropriated from the profit and loss surplus and, therefore, do not appear in the income account. Payments for 1926 compare with those for 1925 as follows:

	1926	1925	Decrease
On stock of Southern Pacific Company	$22,342,854.32	$22,342,854.32	.....
On stock of Transportation System Companies held by the public....	150.00	266,795.00	$266,645.00
Total	$22,343,004.32	$22,609,649.32	$266,645.00

As will be seen, the decrease of $266,645.00 is due to a decrease in the dividends paid on stocks of Transportation System Companies held by the public. Of this amount, the sum of $266,409.00 represents dividends paid last year on the 24,219 shares of Houston & Texas Central R. R. Co. stock held by minority interests, which stock, as was explained on page 21 of last year's report, was purchased by your Company on January 20, 1926.

Transportation Operations—Southern Pacific Lines

The following table shows the Net Railway Operating Income and Traffic Statistics of the Transportation System for the year 1926 compared with those for the year 1925:

		Year Ended Dec. 31, 1926	+Increase —Decrease*	Per Cent
1.	Average miles of road operated	13,279.69	+ 101.00	.77

NET RAILWAY OPERATING INCOME

RAILWAY OPERATING REVENUES

2.	Freight	$216,625,764.45	+$3,605,379.96	1.69
3.	Passenger	55,262,330.25	— 1,029,916.32	1.83
4.	Mail and express.....	11,434,005.02	+ 287,017.45	2.57
5.	All other transportation.....	9,055,584.55	+ 980,163.72	12.14
6.	Incidental	7,383,698.56	+ 546,842.91	8.00
7.	Joint facility—Credit	418,677.65	+ 157,341.06	60.21
8.	Joint facility—Debit.....	*1,379,062.42*	— 847,584.50	159.48
9.	Total railway operating revenues	$298,800,998.06	+$3,699,244.28	1.25

RAILWAY OPERATING EXPENSES

10.	Maintenance of way and structures	$42,464,362.35	+$1,785,482.02	4.39
11.	Maintenance of equipment.....	50,637,575.96	+ 857,451.67	1.72
12.	Total maintenance	$93,101,938.31	+$2,642,933.69	2.92
13.	Traffic	6,359,577.56	+ 677,298.34	11.92
14.	Transportation	102,132,949.91	— 5,714,768.95	5.30
15.	Miscellaneous operations	4,997,186.30	+ 290,824.04	6.18
16.	General	10,788,766.74	+ 181,969.28	1.72
17.	Transportation for investment —Credit	*1,784,938.55*	— 244,345.71	15.86
18.	Total railway operating expenses	$215,595,480.27	—$2,166,089.31	.99
19.	Net revenue from railway operations	$83,205,517.79	+$5,865,333.59	7.58
20.	Railway tax accruals.....	$21,476,810.65	+ $136,412.86	.64
21.	Uncollectible railway revenues.	80,823.05	— 15,509.96	16.10
22.	Railway operating income.	$61,647,884.09	+$5,744,430.69	10.28
23.	Equipment rents—Net	5,636,727.42	— 210,524.91	3.60
24.	Joint facility rents—Net.....	214,438.90	+ 201,612.91	....
25.	Net railway operating income	$55,796,717.77	+$5,753,342.69	11.50

TRAFFIC STATISTICS

(Steam Rail Lines)

FREIGHT TRAFFIC

26.	Freight service train-miles.....	26,681,727	+ 209,286	.79
27.	Tons carried—revenue freight..	59,156,625	— 1,295,039	2.14
28.	Ton-miles—revenue freight....	14,724,692,862	+ 58,525,326	.40
29.	Loaded cars per train.....	27.92	+ .45	1.64
30.	Net tons per train—all freight	628.97	+ 2.16	.34
31.	Revenue per ton-mile—revenue freight	1.401 cents	+ .015 cents	1.08
32.	Average distance carried—revenue freight	248.91	+ 6.30	2.60

PASSENGER TRAFFIC

33.	Passenger service train-miles...	26,810,563	— 149,187	.55
34.	Passengers carried—revenue...	14,284,559	— 226,966	1.56
35.	Passenger-miles—revenue	1,837,935,341	— 26,196,577	1.41
36.	Passengers per train—revenue passengers	66.79	— .27	.40
37.	Passenger revenue per passenger-mile	2.866 cents	— .017 cents	.59
38.	Average distance carried—revenue passengers	128.67	+ .21	.16

* For the purpose of comparison, the 1925 figures used in determining the increases and decreases shown in the above statement include the operations, for the entire year 1925, of the San Antonio & Aransas Pass, taken into the System May 1, 1925; while the 1925 figures used in determining the increases and decreases shown in the income account of the Southern Pacific Lines represent the operations of the lines actually included in the System in 1925, during the period while so included.

As has been stated in reports for previous years, the Transportation Act of 1920 provides that the railways shall receive a fair return upon the aggregate value of railway property held for and used in the service of transportation, such fair return being 5¾ per cent., as last fixed by the Interstate Commerce Commission under authority of the Act. Notwithstanding the movement of a record volume of traffic and the marked gain in efficiency of operation, the existing rate structure, during each year since enactment of the Transportation Act, has failed to give your Company the fair return contemplated by the Act. The relationship of net railway operating income to the book value of road and equipment of the lines constituting your Transportation System, has been as follows:

1921	3.36%
1922	4.29%
1923	4.81%
1924	3.99%
1925	3.77%
1926	3.98%
Average return for 6 years.....	4.03%

[ADVERTISEMENT]

The following tabulation gives the transportation operations for the years 1922, 1923, 1924, 1925, and 1926, compared with the year 1917, the last year prior to Federal control, and with 1921, the first complete year subsequent to Federal control, the figures being given in round thousand dollars:

	1926	1925	1924	1923	1922	1921	1917
Operating revenues	$298,801	$295,102	$291,727	$287,205	$262,519	$269,494	$193,971
Per cent. of 1917	154.04	152.14	150.40	148.07	135.34	.....	.....
Per cent. of 1921	110.87	109.50	108.25	106.57	97.41	.....	.....
Operating expenses	$215,595	$217,762	$214,812	$207,167	$193,664	$212,572	$120,601
Per cent. of 1917	178.77	180.56	178.12	171.78	160.58	.....	.....
Per cent. of 1921	101.42	102.44	101.05	97.46	91.11	.....	.....
Operating ratio	72.15	73.79	73.63	72.13	73.77	78.88	62.17
Net revenue from railway operations	$83,206	$77,340	$76,915	$80,038	$68,855	$56,922	$73,370
Per cent. of 1917	113.41	105.41	104.83	109.09	93.85	.....	.....
Per cent. of 1921	146.18	135.87	135.12	140.61	120.96	.....	.....
Railway tax accruals	$21,477	$21,340	$20,909	$20,365	$18,859	$15,539	$13,792
Per cent. of 1917	155.72	154.73	151.60	147.66	136.74	.....	.....
Per cent. of 1921	138.21	137.33	134.56	131.06	121.37	.....	.....
Net railway operating income	$55,797	$50,043	$50,475	$54,228	$46,223	$35,947	$62,253
Per cent. of 1917	89.63	80.39	81.08	87.11	74.25	.....	.....
Per cent. of 1921	155.22	139.21	140.42	150.86	128.59	.....	.....
Traffic units (ton-miles plus three times passenger miles)—millions	22,679	22,584	21,929	21,044	18,012	17,451	20,877
Per cent. of 1917	108.63	108.18	105.04	100.80	86.28	.....	.....
Per cent. of 1921	129.96	129.41	125.66	120.59	103.21	.....	.....

Total Railway Operating Revenues for 1926, which amounted to $298,800,998.06, were the largest in the Company's history, exceeding by $3,699,244.28, or 1.25 per cent., the previous high record which was established last year. This was the result of an increase of 58,525,326 ton-miles, over the record established last year, in the volume of revenue freight carried by your lines; and to the fact that the tonnage carried included a larger percentage of high class freight, resulting in an increase of .015 cents, or 1.08 per cent., in the revenue per ton-mile of revenue freight carried.

The increase in Railway Operating Revenues of $3,699,244 was accompanied by a decrease in operating expenses of $2,166,089, an increase in taxes of $136,412, and a decrease in equipment and joint facility rents and other charges of $24,422, the result being an increase in Net Railway Operating Income of $5,753,343.

Freight revenue for the year increased $3,605,380, a decrease on the Texas and Louisiana Lines being more than overcome by an increase on the Pacific Lines.

On the Pacific Lines, freight revenue increased $4,154,032. Freight traffic for the first seven months of the year showed a substantial increase; this was partly offset by a decrease in the last five months of the year compared with the same five months of the previous year when a record volume of traffic was handled. The year as a whole shows increased revenue was received from such important commodities as oranges, lettuce, deciduous fruits, mineral oil, fresh vegetables, apples, grain, and cotton, which increases were partially offset by decreases in revenue received from grapes, hay, sugar, logs, and automobiles.

On the Texas and Louisiana Lines, freight revenue decreased $1,176,733. This decrease was attributable, largely, to the effect on business, during the early part of this year, of the severe and unprecedented drouth extending over the Texas Lines in 1925, mentioned on page 12 of last year's report; and to a general depression in business resulting from the low price of cotton. The Texas cotton crop was the largest in the history of the state, the yield being estimated at around 6,000,000 bales. This large increase in the cotton crop of Texas, together with reports of the increased crop in other parts of the United States, caused a marked decline in the price of cotton, resulting in a general business depression in the territory served by the Texas and Louisiana Lines. There was also a large decrease in the volume of mineral oil moved, caused by pipe line competition and by a decline in the production of fields tributary to our lines. These conditions resulted in a decrease of approximately 344,000,000 ton-miles, or 8.4 per cent., in the volume of traffic moved.

While the low price of cotton in Louisiana and Texas is disquieting, yet, because of the delayed movement of last season's enormous yield, the constructive manner in which the cotton situation is being met by crop diversification programs, and the progressive spirit of the territory, it is thought that the business of these lines for 1927, in the aggregate, should at least equal that of 1926.

Passenger revenue decreased $1,029,916. On the Pacific Lines, a decrease of $835,905 was due, principally, to the increasing use of automobiles (both commercial and private), and to a decrease in summer excursion travel and in travel to and from conventions on the Pacific Coast, all of which more than offset an increase of $599,000, resulting from an increase in fares on the San Francisco Ferry and East Bay Electric Lines, effective in January, 1926, and from a 5 per cent. increase in eastbound and westbound summer excursion fares, effective in May, 1926. On the Texas and Louisiana Lines, a decrease of $223,614 was the result, mainly, of an increase in automobile competition.

All Other Transportation revenue increased $980,164, due, principally, to an increase in automobile ferry traffic at San Francisco, and to increased switching and to increased Pullman earnings.

Maintenance of Way and Structures increased $1,785,482, or 4.39 per cent., the result of increased renewals of rails and fastenings, ties, and ballast, due to requirements of upkeep programs, and to the necessity for bringing certain portions of your lines up to main-line standard, to fit them for use as a part of through traffic routes established through construction of new lines. The following table gives the principal items of material used in repairs and renewals during the past five years:

Material Used in Repairs and Renewals

	1926	1925	1924	1923	1922
New steel rail, track miles	510.14	349.09	403.32	458.12	287.21
Ties, number	4,832,239	4,767,408	3,973,715	3,971,158	4,024,967
Ties, number per mile	248	252	222	245	251
Tie-plates, number	7,516,596	6,162,239	5,485,332	5,390,530	4,084,974
Piling, lineal feet	489,580	883,017	766,208	825,745	608,467
Lumber, feet b.m.	27,528,359	37,661,011	32,023,097	26,463,926	27,842,532

Maintenance of Equipment increased $857,452, or 1.72 per cent., due, principally, to increased repairs of freight and passenger cars.

Traffic Expenses increased $677,298, or 11.92 per cent., due, principally, to expenditures for outside agencies and for advertising, to obtain our share of competitive traffic.

Transportation Expenses decreased $5,714,769, or 5.30 per cent. This was due, mainly, to a decrease in the cost of fuel for locomotives, resulting partly from lower prices of fuel and partly from a saving in fuel consumption. While there was an increase of 58,525,326 ton-miles in the volume of traffic handled, an increase in the train load enabled us to handle this increased traffic with approximately the same number of train-miles as handled last year.

The constant campaign carried on for years to reduce fuel consumption in locomotives has been reflected by a gradual but large reduction in the amount of fuel used in proportion to the ton-miles of traffic moved. The reduction in pounds of fuel used per 1,000 gross ton-miles in 1926, under 1925, amounted to 10.92 per cent. in passenger service, and 3.53 per cent. in freight service. The value of the economy realized in 1926, compared with 1925, amounted to $1,156,775, and in 1926, compared with 1913, to $11,038,315. The following table shows results obtained in fuel economy in 1926, compared with the preceding two years, and with the year 1913:

Locomotive Fuel Performance

Pounds Fuel per 1,000 Gross Ton Miles:	1926	1925	1924	1913	Comparison of 1926 with 1925	Comparison of 1926 with 1924	Comparison of 1926 with 1913
Passenger Service	126.35	141.84	149.30	206.67	— 10.92%	— 15.37%	— 38.86%
Freight Service	124.67	129.23	132.11	192.83	— 3.53%	— 5.63%	— 35.35%

Value of Fuel Saved in	
1926 over 1925	$1,156,775
1926 over 1924	1,793,388
1926 over 1913	11,038,315

[Advertisement]

Miscellaneous Operations increased $290,824, or 6.18 per cent., due, principally, to increased dining car service; and to expense of operating Sunset Grain Elevator at Galveston, Texas, which was not operated during 1925.

Railway Tax Accruals for the year amounted to $21,476,811, an increase over 1925 of $136,413, or .64 per cent. The taxes for the year consumed 25.8 per cent. of the net revenue from railway operations, and almost equaled the total dividends paid to stockholders.

Expenses incurred during the year, on account of Federal valuation of railways, amounted to $994,649, making the total disbursements on this account, from the time the work began to the close of the present year, $7,400,758.

Capital Stock—Southern Pacific Lines

The decrease during the year in capital stocks of Southern Pacific Company and Transportation System Companies *held by the public* amounted to $2,425,100.00, as follows:

Capital stock of Houston & Texas Central Railroad Company, acquired from Minority Stockholders, as mentioned on page 21 of last year's report	$2,421,900.00	
Other capital stocks of Transportation System Companies, acquired from the public during the year	3,200.00	
Decrease in capital stocks held by the public		$2,425,100.00

Funded Debt—Southern Pacific Lines

The increase during the year in funded debt of Southern Pacific Company and Transportation System Companies *held by the public* amounted to $1,797,353.52, as follows:

Southern Pacific Company Four and One-Half Per Cent. Equipment Trust Certificates, Series I, issued to provide for the construction and acquisition of new rolling stock	$5,654,000.00	
El Paso & Southwestern Railroad Company First & Refunding Mortgage Five Per Cent. Gold Bonds, issued to the public in exchange for bonds of subsidiary companies, in pursuance of readjustment plan approved by the Interstate Commerce Commission, December 26, 1923	214,000.00	
Southern Pacific Railroad Company First Refunding Mortgage Four Per Cent. Bonds held in Oregon & California Railroad Company's First Mortgage Sinking Fund at the close of last year, which were sold to the public during the year by the Trustee, the proceeds from such sale to be used by the Trustee in redeeming Oregon & California Railroad Company's First Mortgage Bonds, in accordance with the provisions of said sinking fund	38,000.00	
Total issued to the public during the year	$5,906,000.00	
Less: Funded debt held by the public, retired during the year	4,108,646.48	
Increase in funded debt held by the public		$1,797,353.52

Investment Assets—Southern Pacific Lines

The following is a brief description of the investment assets of the Transportation System as shown in the balance sheet, viz.:

INVESTMENT IN TRANSPORTATION PROPERTY		$1,400,607,118.61
Book value of investment in transportation property carried on the books of the companies comprising the Transportation System, consisting of 13,416 miles of first main track, 952 miles of additional main tracks, 5,598 miles of yard tracks and sidings, the Company's terminals at Galveston, a ten-story office building in San Francisco, 2,454 locomotives, 2,910 passenger-train cars, 80,603 freight-train cars, 5,942 company service cars, 23 ocean steamships, 4 river steamships, 10 automobile ferry boats, 13 passenger ferry and car transfer boats, 11 tugs, 78 barges, and 19 other vessels, the whole forming a transcontinental system extending from New York via New Orleans and Galveston, to San Francisco, California, and Portland, Oregon, with a line extending from Ogden, Utah, to San Francisco, California.		
SINKING FUNDS		21,838,331.56
Sinking funds for the redemption of outstanding funded debt, consisting principally of $17,918,000, par value, bonds of Transportation System Companies, $1,885,000, par value, bonds of other companies, and $2,429,631.86 cash in hands of Trustees.		
MISCELLANEOUS PHYSICAL PROPERTY		3,993,581.80
Book value of terminal and other real estate acquired in anticipation of future use.		
INVESTMENTS IN AFFILIATED COMPANIES		645,955,121.39
Investments in securities of Transportation System Companies, which are included in the outstanding obligations as shown by the balance sheet, but which are owned within the system;		
Investments in securities of, and advances to, Solely Controlled Affiliated Companies and Jointly Controlled Affiliated Companies collateral to, but not a part of, the Transportation System, representing, principally, investments as follows:		
Electric Railways in California (full ownership), operated mileage	898.85	
Steam Railways (full ownership), operated mileage	1,432.84	
Steam Railways (half ownership), operated mileage	741.20	
Total operated mileage of railways collateral to, but not a part of, the Transportation System	3,072.89	
Lumber Companies (full ownership), owning 22,667 acres of timber lands, 43,826 acres of other lands, 2 saw mills, etc. Average annual production of manufactured lumber, 36,000,000 feet B. M., and of railroad ties, 7,000,000 feet B. M.;		
Land Companies (full ownership), owning 9,705,335 acres of lands in various states traversed by the Southern Pacific Lines; and 6,289 town lots. Of these town lots, 2,979 are located in the State of Texas; 659 in the State of Nevada; and 2,651 in the State of California of which 1,149 are located in Los Angeles and vicinity;		
Coal Companies (full ownership), owning 22,688 acres of coal lands in Oregon and Colorado, and 6,321 acres of prospective coal lands, and 2,457 acres of lignite, clay, and other lands in Texas;		
Oil Companies (full ownership), owning 5,091 acres (including 3,753 acres fully owned and 1,338 acres jointly owned), and holding under lease 15,479 acres, of producing and prospective oil lands in Texas and Louisiana, and near Tampico, Mexico, together with ownership of mineral rights in 84,620 acres of prospective oil lands in Texas. Number of producing wells, 182. Annual production, about 4,000,000 barrels;		
Terminal Companies (full ownership), owning 25 acres of land in the City of Los Angeles, California, with improvements, including three two-story market buildings, and one seven-story, two six-story, and one four-story warehouse buildings situated on the line of Southern Pacific in the heart of the wholesale district of Los Angeles;		
Rockaway Pacific Corporation (full ownership), owning about 565 acres of land on Jamaica Bay, near Brooklyn, N. Y.;		
Southern Pacific Building Co. (full ownership), owning a nine-story office building at Houston, Texas;		
Associated Pipe Line Co. (one-third ownership), owning 561 miles of oil pipe line serving California oil fields;		
Pacific Fruit Express Co. (half ownership), operating 38,584 refrigerator cars serving Southern Pacific, Union Pacific, and Western Pacific lines; and		
Stock interest, as indicated, in following companies operating railroad terminal facilities;		
El Paso (Texas) Union Passenger Depot Co., 50 per cent;		
Ft. Worth (Texas) Union Passenger Station Co., 50 per cent;		
Northern Pacific Terminal Co. (Portland, Ore.) 20 per cent;		
Ogden (Utah) Union Railway & Depot Co., 50 per cent;		
Union Terminal Co. (Dallas, Tex.) 12.50 per cent.		
OTHER INVESTMENTS		6,119,167.72
Of this amount, $1,486,244.26 represents cash in hands of Trustee to be applied in payment for new equipment; and the remainder represents, principally, investments in outside securities.		
Total Investments		$2,078,513,321.08

Road and Equipment—Southern Pacific Lines

The increase during the year in Investment in Road and Equipment of the Transportation System, as shown in the balance sheet, amounted to $58,788,355.82, as follows:

Expenditures for Road Extensions	$10,801,384.96	
Expenditures for Rolling Stock	11,795,409.92	
Expenditures for Floating Equipment	695,916.33	
Expenditures for Other Additions and Betterments	28,149,043.68	
Total Expenditures		$51,441,754.89
Add		
Investment in road and equipment of the Dayton-Goose Creek Railway Company at May 1, 1926, on which date such company was taken into the Transportation System	$748,337.51	
Adjustment account transfer of value of land held for transportation purposes from account "Miscellaneous Physical Property"	8,398,001.71	
Value of transportation property of Industrial Development and Land Company (a Solely Controlled Affiliated Company dissolved during the year) which property was taken over by Southern Pacific Company upon the dissolution of said Affiliated Company	5,532,224.20	14,678,563.42
		$66,120,318.31
Deduct		
Property retired, equipment vacated, and other adjustments		7,331,962.49
Net increase in Investment in Road and Equipment		$58,788,355.82

[ADVERTISEMENT]

Balance Sheet of Southern Pacific Lines

Southern Pacific Company and Transportation System Companies, Combined Assets—December 31, 1926, Compared with December 31, 1925, Excluding Offsetting Accounts

Assets

	December 31, 1926	+Increase —Decrease
Investments		
Investment in road and equipment	$1,400,075,851.22	+$58,788,355.82
Improvements on leased railway property	531,267.39	+286,982.67
Sinking funds	21,838,331.56	+3,091,454.89
Deposits in lieu of mortgaged property sold	1,860,350.15	—1,124,040.75
Miscellaneous physical property	3,993,581.80	—8,529,606.23
Investments in affiliated companies:		
Stocks	366,788,163.73	+54,061,855.30
Bonds	162,184,643.70	+11,164,819.55
Stocks, Bonds } Cost inseparable	54,407,340.15	—96,000.00
Notes	25,618,499.34	—3,282,340.27
Advances	36,956,474.47	—50,562,274.02
Other investments:		
Stocks	55,285.70	—1,536,834.31
Bonds	2,625,151.85	—62,827.01
Notes	381,845.98	—15,359.67
Advances	65,058.78	—28,693.38
Miscellaneous	1,131,475.26	+20,098.03
Total	$2,078,513,321.08	+$62,175,590.62
Current Assets		
Cash	$24,916,418.05	+$449,322.72
Demand loans and deposits		—13,049,243.72
Time drafts and deposits		—20,063,291.67
Special deposits	149,069.22	—1,592.75
Loans and bills receivable	687,499.38	—208,285.95
Traffic and car-service balances receivable	2,755,618.04	—683,817.26
Net balance receivable from agents and conductors	3,468,942.06	—105,864.72
Miscellaneous accounts receivable	6,747,556.24	—1,222,694.96
Material and supplies	42,582,351.12	+9,642,266.37
Interest and dividends receivable	3,094,657.47	+187,504.25
Rents receivable	5,833.33	
Other current assets	205,849.51	—19,044.31
Total	$84,613,794.42	—$25,074,742.00
Deferred Assets		
Working fund advances	$109,931.49	+$21,376.62
Insurance and other funds	25,360.00	
Other deferred assets	2,387,433.50	—1,739,750.23
Total	$2,522,724.99	—$1,718,373.61
Unadjusted Debits		
Rents and insurance premiums paid in advance	$184,000.81	—$27,087.62
Discount on capital stock	3,988,600.00	
Discount on funded debt	2,024,000.66	—64,211.33
Other unadjusted debits	11,750,560.82	+940,692.69
Securities issued or assumed—Unpledged (a)	2,158,575.00	—561,400.00
Securities issued or assumed—Pledged (a)	101,250.00	
Total	$17,947,162.29	+$849,393.74
Grand Total	$2,183,597,002.78	+$36,231,868.75

(a) Excluded from total assets, and a corresponding amount excluded from outstanding funded debt in accordance with regulations of the Interstate Commerce Commission.

Liabilities

		December 31, 1926	+Increase —Decrease
Capital Stock			
Southern Pacific Company	$372,380,905.64		
Transportation System Companies	398,029,900.00		
Total	$770,410,805.64		
Held by the public		$372,406,315.64	—$2,425,100.00
Held within the system		398,004,490.00	+2,450,100.00
Total stock		$770,410,805.64	+$25,000.00
Premium on capital stock of Southern Pacific Company		$6,304,440.00	
Total		$776,715,245.64	+$25,000.00
Long Term Debt			
Funded debt unmatured:			
Southern Pacific Company	$216,431,885.00		
Transportation System Companies	520,855,743.61		
Total	$737,287,628.61		
Held by the public		$599,267,988.36	+$1,797,353.52
Held within the system		138,019,640.25	+6,225,000.00
Total funded debt		$737,287,628.61	+$8,022,353.52
Nonnegotiable debt to Affiliated Companies:			
Open accounts		40,997,591.09	+5,073,571.56
Total		$778,285,219.70	+$13,095,925.08
Current Liabilities			
Loans and bills payable		$18,715.05	—$106,284.95
Traffic and car-service balances payable		5,919,662.38	—346,984.24
Audited accounts and wages payable		20,297,417.76	+3,089,138.43
Miscellaneous accounts payable		1,454,783.20	+37,398.51
Interest matured unpaid		313,985.05	+8,393.44
Interest payable January 1st		4,202,637.50	—6,605.00
Dividends matured unpaid		70,040.01	—10,079.68
Dividends payable January 1st		5,585,713.58	
Funded debt matured unpaid		14,000.00	—1,000.00
Unmatured dividends declared		250,000.00	
Unmatured interest accrued		6,274,465.16	+38,039.98
Unmatured rents accrued		143,553.48	+52,226.01
Other current liabilities		939,405.85	+58,909.82
Total		$45,484,379.02	+$2,813,152.32
Deferred Liabilities			
Other deferred liabilities		$354,630.63	—$587,365.57
Unadjusted Credits			
Tax liability		$4,721,574.14	—$3,596,554.43
Insurance and casualty reserves		3,665,161.09	+364,066.53
Accrued depreciation—Road		2,507,081.28	+70,344.03
Accrued depreciation—Equipment		94,921,611.68	+8,899,386.93
Other unadjusted credits		42,948,043.74	—6,001,947.59
Total		$148,763,471.93	—$264,704.53
Corporate Surplus			
Additions to property through income and surplus		$8,950,512.54	+$626,621.48
Funded debt retired through income and surplus		26,945,066.85	+331,657.78
Sinking fund reserves		20,315,815.33	+5,141,277.62
Miscellaneous fund reserves		52,802.45	+52,802.45
Appropriated surplus not specifically invested		3,818,177.83	
Total appropriated surplus		$60,082,375.00	+$6,152,359.33
Profit and loss—Balance		373,911,680.86	+14,997,502.12
Total corporate surplus		$433,994,055.86	+$21,149,861.45
Grand total		$2,183,597,002.78	+$36,231,868.75

The following table shows the number of units of each class of rolling stock owned at December 31, 1926, and at December 31, 1925, and the number of units of each class added and retired during year:

Class	Owned Dec. 31, 1926	Owned Dec. 31, 1925	Changes During the Year: Added *	Retired
Locomotives	2,454	2,440	52	38
Passenger-train cars	2,910	2,927	76	93
Freight-train cars	80,603	79,170	2,350	917
Work equipment	5,942	5,883	378	319

* Includes 2 locomotives, 2 passenger-train cars, and 3 freight-train cars acquired with Dayton-Goose Creek Railway Company taken into System during the year.

To provide for increased requirements and to replace vacated equipment, your Company will add to its equipment, during 1927, by construction at Company shops, or by purchase from outside builders, rolling stock, as follows, viz.:

	Company Shops	Outside Builders	Total
Locomotives	8	10	18
Passenger-train cars	..	81	81
Freight-train cars	1,300	1,200	2,500
Company service equipment	7	14	21

The estimated cost of this equipment is $9,400,000.

Contracts were made during the year for the construction of one ocean-going passenger and freight steamer of approximately 12,000 tons displacement, for use in the Company's Atlantic Steamship Lines coastwise service; also for the construction of three additional automobile ferry steamers, for service between San Francisco and Oakland, to accommodate the increase in local automobile traffic between these points. The cost of this floating equipment will approximate $4,000,000.

The total estimated cost of the new rolling stock and of floating equipment mentioned above, which is in addition to equipment completed and placed in service during 1926, amounts to $13,400,000.

Claim for Closing Colorado River Break

On page 21 of last year's report, mention was made of a suit brought by your company, by sanction of Act of Congress, in the Court of Claims, Washington, D. C., to enforce its claim against the Government of the United States for $1,113,677.42 for expenditures incurred twenty years ago, at the instance of President Roosevelt, in closing a break in the Colorado River, which operation prevented permanent flood disaster to the property and people of the Imperial Valley. The Government's representatives have completed the checking of your Company's claim, and the taking of testimony in the suit is in progress.

[Advertisement]

Balance Sheet and Income Account of Solely Controlled Affiliated Companies

Below will be found a condensed balance sheet as of December 31, 1926, and a condensed income account for the year 1926, of all separately operated Solely Controlled Affiliated Companies, combined:

BALANCE SHEET		Dec. 31, 1926
Assets		
1. Property investment		$250,221,190.87
2. Sinking funds		268,270.69
3. Investments in affiliated companies—Stocks		337,838.64
4. Investments in affiliated companies—Bonds		418,950.00
5. Investments in affiliated companies—Advances		33,192,155.02
6. Other investments		14,006,390.99
7. Cash		1,235,472.65
8. Accounts receivable		3,426,693.44
9. Material and supplies		5,349,070.07
10. Merchandise		1,373,881.48
11. Deferred assets		2,481,768.90
12. Discount on securities		11,402,395.40
13. Other unadjusted debits		22,142,876.36
14. Grand total		$345,856,954.51
Liabilities		
15. Capital stock		*$149,936,368.00
16. Premium on capital stock		535,151.75
17. Funded debt:		
(a) Held by the public	$31,779,000.00	
(b) Held within the system	30,468,000.00	
(c) Total		62,247,000.00
18. Nonnegotiable debt to affiliated companies		61,731,447.97
19. Current liabilities		4,703,581.95
20. Deferred liabilities		471,834.22
21. Accrued depreciation		12,685,952.55
22. Reserve for amortization of property investment		8,887,708.46
23. Other unadjusted credits		11,540,753.88
24. Total liabilities		$312,739,798.78
25. Additions to property through income and surplus		$1,010,493.05
26. Sinking fund reserves		302,776.52
27. Appropriated surplus not specifically invested		700,000.00
28. Profit and loss—Balance		31,103,886.16
29. Total corporate surplus		$33,117,155.73
30. Grand total		$345,856,954.51
Income Account		**Year Ended Dec. 31, 1926**
31. Operating revenues		$36,816,264.18
32. Operating expenses (including depreciation)		27,773,604.64
33. Net revenue from operations		$9,042,659.54
34. Taxes		2,874,585.67
35. Uncollectible railway revenue		441.29
36. Equipment and joint facility rents—Net		428,402.53
37. Net operating income		$5,739,230.05
38. Nonoperating income		1,760,148.93
39. Gross income		$7,499,378.98
40. Interest on funded debt		$3,104,510.00
41. Other deductions from gross income		1,151,577.73
42. Total deductions		$4,256,087.73
43. Net income		$3,243,291.25
44. Income applied to sinking and other reserve funds		$28,430.00
45. Income balance transferred to credit of profit and loss		$3,214,861.25

* Of the amount of outstanding capital stock shown above, all but $53,110 is owned within the system.

Construction of Additional Main Lines in Arizona

The last section of the additional main lines in Arizona, the construction of which was undertaken as a part of the general plan under which the control of the El Paso & Southwestern system of railways was acquired, as explained on page 25 of the 1924 annual report, was completed and placed in operation during the year. The construction of these additional lines in connection with the inclusion in the system of the El Paso & Southwestern lines, avoided the cost of constructing an urgently needed second line between Dome, Arizona, and El Paso, Texas, a distance of about 544 miles. The completion of these lines not only gives the main line route between Yuma, Arizona, and El Paso, Texas, the equivalent of a double track for all but 57 miles of the entire distance; but also places on the main line the important city of Phoenix, the capital of Arizona, provides through direct service for the rich irrigated Salt River Valley, and shortens the haul to existing sources of important traffic.

Cascade Line on Shasta Route

(Natron Cut-Off)

The Natron Cut-Off (which will hereafter be referred to as the Cascade Line), mention of which was made in the annual report for the years 1923, 1924, and 1925, including the reconstruction of about 23 miles of the southerly portion of the line, specifically mentioned on page 22 of last year's report, was completed and placed in operation for through freight service and local passenger service in September, 1926. To allow proper time, however, for the settling of seasoning of the road bed, the establishment of through passenger service over the line has been deferred until the Spring of 1927. As completed this line extends from Natron, Oregon, to Black Butte, California, a distance of approximately 269 miles, the cost of which to the close of the year amounts to $39,432,000. The completion of this line will shorten the distance between Portland and San Francisco approximately 25 miles, and will give two lines between Black Butte, California, and Springfield Junction, Oregon, (a) the old line over the Siskiyou Range with grades of 174 feet to the mile and (b) the new line over the Cascade Range with grades of 95 feet to the mile. This will give your Company the equivalent of a double track for its heavy traffic between Oregon and California. The new line, because of its lighter grades and saving in curvature, will permit of faster schedules for through passenger and freight service, and this, with the saving in distance, will result not only in a saving in operating costs but also in a material saving of time for through passenger and freight service between Portland and San Francisco. The new line gives rail facilities heretofore unprovided to a region having heavy timber resources and a possible agricultural development which, it is expected, will furnish your Company with profitable traffic. Adequate passenger and freight service will continue to be maintained over the Siskiyou Line.

Proposed New Lines in Southern Oregon and Northern California

On page 22 of last year's annual report, mention was made of your Company's plans for the further development of the country lying generally to the east of the Cascade Line (Natron Cut-Off) in Southern Oregon and Northeastern California (which plans also contemplated the establishment of a new through route between the Willamette Valley and the Klamath Basin, in Oregon, and points on the main line across Nevada to Ogden, Utah, and beyond); and to the fact that, in furtherance of such plans, the Company had made application to the Interstate Commerce Commission for authority to acquire and/or to construct the following lines of railway as contemplated by such plans, viz.:

1. Acquisition of control of the Nevada-California-Oregon Railway through the purchase of securities of that Company:
2. Construction of a line extending from Klamath Falls, Oregon, through Cornell, California, to a connection with the Nevada-California-Oregon Railway near Alturas, California;
3. Acquisition of control through stock ownership of the Oregon, California and Eastern Railway, extending from Klamath Falls to Sprague River, Oregon, and the construction of certain extensions by that Company.

Mention was also made of the fact that while the Interstate Commerce Commission had our application under consideration, the situation was complicated by an application of the Oregon Trunk Railway, a Northern Pacific-Great Northern subsidiary, to extend its line from Bend, Oregon, south to Klamath Falls. This proposed extension of the Oregon Trunk Railway follows a route east of the Cascade Line; and from a point east of Paunina, on the Cascade Line, to Klamath Falls, the proposed route of such extension generally parallels the Cascade Line and the Oregon, California and Eastern Railway. In a decision rendered May 3, 1926, the Commission held that while the Oregon Trunk Railway should be granted an entrance to the Klamath Basin, the expense of constructing an additional line from Paunina to Klamath Falls should be avoided by the use of the existing facilities between those points. In such decision the Commission granted to your Company authority to acquire control of the Nevada-California-Oregon Railway, and to construct the line from Klamath Falls to a connection with the Nevada-California-Oregon Railway, as requested. It granted authority to your Company to acquire control of the Oregon, California and Eastern Railway and to the latter to construct certain extensions, upon the express condition that the Oregon Trunk Railway should be granted joint use of your Company's Cascade Line between Paunina and Klamath Falls, or joint use of the Oregon, California and Eastern Railway; and it granted to the Oregon Trunk Railway authority to construct an extension from Bend, Oregon, to a connection with the Cascade Line at Paunina, Oregon, or to a connection with the Oregon, California and Eastern Railway at some appropriate point. In its decision the Commission suggested that the Oregon Trunk Railway and the Southern Pacific should get together and endeavor to arrange for the joint use of the latter's Cascade Line between Paunina and Klamath Falls.

In compliance with the expressed desire of the Commission, your Company used every effort to reach an agreement with the Oregon Trunk Railway for such joint use. The Oregon Trunk was offered the equal joint use of that part of your Company's Cascade Line between Paunina and Klamath Falls, a distance of 75.77 miles, with permission to perform local service; either party to be permitted to construct branches extending either west or east from the main line (the other party to be permitted to join equally therein, if it so desired), provided that any western branches should not extend beyond the summit of the Cascade

[Advertisement]

Range, and that any eastern branches should not extend into territory properly tributary to the Oregon, California and Eastern Railway lines as proposed to be extended. The Oregon Trunk to have access to all industries in Klamath Falls served by your Company with the same switching charge prevailing under like conditions elsewhere in Oregon, and, further, to be permitted to use your Company's line through Klamath Falls, a distance of 3.69 miles, as a bridge line to reach the Oregon Trunk terminals south of Klamath Falls. For these rights your Company asked the Oregon Trunk to pay a rental equivalent to five per cent. per annum on one-half the cost of the joint facilities (but not to exceed $165,000 per annum), plus one-half the taxes thereon, and to pay a proportion of maintenance and other joint operating expenses on the basis of use.

The Oregon Trunk's proposal was that it should pay as a rental a share of five per cent. per annum on the cost of the joint facilities in proportion to their use, with a minimum rental of one-fourth of five per cent. on the cost of such facilities; that taxes, as well as maintenance and other joint operating expenses, should be shared on the basis of the use of the facilities; and that it (the Oregon Trunk) should be permitted to purchase and own a one-half interest in the Oregon, California and Eastern Railway at cost thereof to your Company. If not permitted to acquire the proposed interest in the Oregon, California and Eastern, the Oregon Trunk insisted that it should be permitted to construct a line from Chiloquin, a point 27 miles north of Klamath Falls on the Cascade Line, eastward to Sprague Landing, a distance of 30 miles, and should have the right to extend its line to the east and north from Sprague Landing, such construction, however, to be at joint expense. The Oregon Trunk, in its memorandum to the Commission stated, however, that its annual charge at the terms offered by your Company, together with the charge on the capital cost of the proposed branch from Chiloquin, would exceed the annual charge on the cost of its own proposed line from Paunina to Klamath Falls, and it therefore renewed its request for authority to construct its own line from Bend to Klamath Falls.

On February 15, 1927, the Commission issued a ruling in which, among other things, it stated:

"As stated in the original report, a controlling purpose in our decision upon the application of the Oregon Trunk was that while Southern Oregon should be linked with the northern lines, in doing so unnecessary capital expenditure involved by the construction of an additional through line between Paunina and Klamath Falls should be avoided by the utilization of existing facilities. Such purpose is still controlling. The proposals of the Oregon Trunk for the independent construction of its own line are inconsistent therewith. We regard it as important that there shall be no unnecessary duplication of facilities. We are of the opinion that the present proposal of the Southern Pacific, with the modifications we here suggest, is in substantial compliance with the conclusions announced in our original report. The proposed terms are generally fair. * * * * * * * An order which will give finality to these conclusions will not be entered at the moment; the Southern Pacific will be allowed 25 days from the service hereof in which to prepare and present to the Oregon Trunk and to file with us a complete draft of contract, and the Oregon Trunk within 20 days after such filing should notify us whether the terms proposed are acceptable, or to except to them as not consistent with our conclusions or with proper usage in trackage agreements."

The Commission stated that "taxes on the property jointly used may properly be apportioned between the parties on the basis of use, in conformity with the more usual practice under similar circumstances." And further, that "the proposed limitation upon the construction of branch lines, or the extension of main lines, is not a proper subject of contract."

Your Company presented to the Oregon Trunk Railway, and filed with the Commission within the time limit allowed by the Commission, a complete draft of contract covering the proposed joint use of the Cascade Line between Paunina and Klamath Falls, Oregon, the terms theretofore offered to the Oregon Trunk being modified, in such contract, to accord with the suggestions of the Commission, but to date of going to press no information has been received as to the attitude of the Oregon Trunk Railway concerning the proposed contract.

In the meantime, your Company, on October 8, 1926, acquired control of the Nevada-California-Oregon Railway (which is operated by its own separate organization) by the purchase of the entire outstanding common stock and funded debt of that Company. No further action will be taken, however, toward the construction and/or acquisition of the other lines contemplated in the plans of your Company, as aforesaid, until the questions concerning the proposed entrance of the Oregon Trunk Railway into the Klamath Basin shall have been determined, and an appropriate order in connection with our application entered by the Commission.

Oregon and California Railroad Land Grand Controversy

A decree of the United States District Court for Oregon was rendered, and entered, on April 28, 1926, in the accounting suit mentioned on page 23 of last year's report. This decree, in effect, adjudged that, subject to certain adjustment, as mentioned in the decree, the Oregon & California Railroad Company, with its lien holder, the Central Union Trust Company of New York, Trustee, under Oregon & California Railroad Company's First Mortgage of July 1, 1887, recover from the United States the sum of $3,901,088.64, of which the sum of $1,723,470.56 was to be paid to the Oregon & California Railroad Company, and the sum of $2,177,618.08 to said Central Union Trust Company of New York.

On June 25, 1926, the above mentioned sums of $1,723,470.56, and $2,177,618.08, were paid by the United States to the Oregon & California Railroad Company, and to the Central Union Trust Company of New York, respectively.

The degree designated certain parcels of land aggregating 769,639 acres, included in the acreage for which compensation was allowed under the decree, and provided that if and when any of the land embraced in the said 769,639 acres should hereafter be found to be mineral land within the meaning of the Granting Acts, then the Railroad Company should repay to the United States the sum of $2.50 per acre for each acre so determined to be mineral land within the meaning of said Granting Acts.

Southern Pacific Railroad Company of Mexico

At the time of publishing last year's report, it was thought that the 102.78 mile gap in the main line between Tepic and La Quemada would be completed and ballasted by January, 1927, but unexpected difficulties in the nature of slides and heavy formation in tunnels, storms of unprecedented severity in the latter part of the year, and the unsettled condition of the Country, caused the work to be delayed. At the end of the year, however, all the tunnel excavations and all the grading had been completed, and all but about 4.11 miles of track laid. The ballasting of the new line is being pushed as rapidly as possible, and it is now thought that the new line, completely ballasted, will be ready for operation early in April, 1927.

Extension of San Antonio and Aransas Pass Railway Into Rio Grande Valley

On July 31, 1926, the Interstate Commerce Commission authorized the San Antonio & Aransas Pass Railway Company to construct a line of railroad, approximately 85 miles in length, extending from the present terminus of the Falfurrias Branch, southerly through Brooks and Hidalgo counties, to the International boundary line between the United States and Republic of Mexico; also a branch line from the City of Edinburg, on the above line, easterly through Hidalgo and Cameron counties to the City of Harlingen, a distance of approximately 35 miles. The work of construction was commenced immediately upon receipt of the Commission's order, and at the end of the year approximately 73 miles of the extension from Falfurrias south, and 10 miles of the branch from Edinburg to Harlingen, had been completed, while the grading of the remainder of the mileage, ready for ties and rails, was about completed. Regular freight and passenger service between Falfurrias and McAllen, and freight service on 15 miles of the line east of Edinburg, was established early in February, 1927.

Application for authority to extend the Harlingen Branch from Harlingen to Brownsville was filed with the Commission on October 21, 1926, and a hearing on this application was held at Houston, December 2, 1926. The Commission has not yet rendered its decision on this application.

Acquisition of Control of the Dayton-Goose Creek Railway Company

Pursuant to authority granted by the Interstate Commerce Commission, control of the Dayton-Goose Creek Railway Company was acquired as of May 1, 1926, the Southern Pacific Company acquiring control through stock ownership, and the Texas & New Orleans Railroad Company, a Southern Pacific Company subsidiary, acquiring control by lease, since which date the line of the said Company, extending from Baytown, Texas, to a connection with the line of the Texas & New Orleans Railroad Company at Dayton, Texas, a distance of 24.99 miles has been operated by the last named company. The Baytown Refinery of the Humble Oil & Refining Company, located on this line, furnishes a large amount of revenue traffic.

Unification of Texas and Louisiana Lines by Lease to Texas and New Orleans Railroad Company

On September 23, 1926, application was made to the Interstate Commerce Commission for authority to unify the operations of all your Company's lines in Texas and Louisiana through the medium of leases to the Texas and New Orleans Railroad Company (a solely controlled subsidiary of your Company), of the properties of the following companies, which, together with the Texas & New Orleans Railroad, comprise that part of the Transportation System known as the Texas and Louisiana Lines:

Franklin & Abbeville Railway Company.
Galveston, Harrisburg & San Antonio Railway Company.
Houston, East & West Texas Railway Company.
Houston & Shreveport Railroad Company.
Houston & Texas Central Railroad Company.
Iberia & Vermilion Railroad Company.
Lake Charles & Northern Railroad Company.
Louisiana Western Railroad Company

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Morgan's Louisiana & Texas Railroad & Steamship Company.
San Antonio & Aransas Pass Railway Company.
Southern Pacific Terminal Company.

The Commission approved this application by an order, dated December 28, 1926, and the unification was made effective March 1, 1927. It is expected that as a result of this unification considerable saving will be effected by a reduction in accounting work.

Rockaway Pacific Corporation

On July 9, 1926, the New York Court of Appeals unanimously affirmed a judgment of the Appellate Division, which in turn affirmed a judgment of the Court of Claims, awarding the Rockaway Pacific Corporation damages on account of the appropriation by the State of New York, on April 4, 1917, of the property on Rockaway Point, Queens County, New York, now known as Fort Tilden; and further decreeing that the Corporation owned the entire remainder of the westerly end of Rockaway Point to mean low water. Pursuant to this award the Corporation received, including interest to date of payment, the sum of $2,051,753.01. The area of the property which has thus been adjudicated, and which is still owned by the Corporation, consists of approximately 565 acres. The City of New York has instituted an ejectment action to re-try the title to the property in question, and the judgments above mentioned have been pleaded as a defense.

Federal Valuation of Railroads

The Act of Congress, approved March 1, 1913, known as the Federal Valuation Act, and amendments thereof, directs the Interstate Commerce Commission to determine the valuation of the transportation properties of each railway corporation in the United States, engaged in interstate commerce and subject to the Interstate Commerce Act.

In connection with the valuation of the property of each of such railway corporations, the Act directs the Commission, among other things, to ascertain:

1. The original cost of such property to date of valuation;
2. The cost of reproduction new;
3. The cost of reproduction new, less depreciation;
4. The present value of lands held for, and used in the service of transportation; and

numerous other facts, as set forth in the statute, which are assumed to have a bearing upon the valuation of such properties. The Act also directs the Commission, in making such valuation, to take into account any and all elements of value which may be found to exist.

Upon the completion of the valuation of any of such properties, the Commission is further directed to prepare, and to serve upon the owning carrier, a tentative valuation wherein shall be set forth the value placed upon the property by the Commission, together with the Commission's findings of fact concerning the matters referred to in the next preceding paragraph. This tentative valuation is thereafter, within a specified time, subject to protest by the carrier, in which event provision is made for formal hearing and determination by the Commission.

Shortly after the effective date of the Valuation Act, your Company formed, and has since maintained, an organization known as the Valuation Department, which has actively co-operated with the field organization of the Interstate Commerce Commission in the preparation of a complete field inventory of all the transportation properties of the Southern Pacific Lines and Affiliated Companies. In addition to this co-operative work, the Valuation Department has been engaged in preparing valuations, based on the provisions of the Valuation Act as understood by the Valuation Department, of the transportation properties of the various companies, for the purpose of comparison with the tentative valuations of such properties served by the Commission's Bureau of Valuation, and to serve as a basis for any protests to such tentative valuations which it may be found necessary to make to protect the interests of your Company. For this purpose your Company has expended, to December 31, 1926, the sum of $7,400,758, of which the sum of $994,649 was expended during the current year.

To December 31, 1926, the Commission's Bureau of Valuation has served tentative valuations on the following companies, the lines of which are included in the Transportation System of the Southern Pacific Lines:

Name of Company	Date of Tentative Valuation
TEXAS AND LOUISIANA LINES	
1. Dayton-Goose Creek Ry. Co.	December 31, 1920
2. Franklin & Abbeville Ry. Co.	June 30, 1919
3. Galveston, Harrisburg & San Antonio Ry. Co.	June 30, 1918
4. Houston, East & West Texas Ry. Co.	do
5. Houston & Shreveport R. R. Co.	do
6. Houston & Texas Central R. R. Co.	do
7. Iberia & Vermilion R. R. Co.	do
8. Lake Charles & Northern R. R. Co.	do
9. Louisiana Western R. R. Co.	do
10. Morgan's Louisiana & Texas R. R. & S. S. Co.	do
11. Southern Pacific Terminal Co.	do
12. San Antonio & Aransas Pass Ry. Co.	June 30, 1919
13. Texas & New Orleans R. R. Co.	June 30, 1918
14. Texas State Railroad (Leased from State of Texas).	June 30, 1917
PACIFIC LINES	
15. Alamogordo & Sacramento Mountain Ry. Co.	June 30, 1917
16. Arizona & New Mexico Ry. Co.	do
17. Arizona Eastern R. R. Co.	June 30, 1915
18. Burro Mountain R. R. Co.	June 30, 1917
19. Dawson Ry. Co.	do
20. El Paso & Northeastern R. R. Co.	do
21. El Paso & Northeastern Ry Co.	do
22. El Paso & Rock Island Ry. Co.	do
23. El Paso & Southwestern R. R. Co.	do
24. El Paso & Southwestern R. R. Co. of Texas.	do
25. Phoenix & Eastern R. R. Co.	June 30, 1915

In the case of each of such tentative valuations formal protest was filed within the statutory period. Hearings have been held in the case of the companies, numbered 1, 2, 12, and 14, and a partial hearing in the case of the company numbered 16. In the case of none of these companies, however, has a final valuation been served by the Commission.

Although preliminary engineering, land, and accounting reports have been served on the Southern Pacific Company in respect of the following properties owned and/or operated by it as part of the Transportation System of the Southern Pacific Lines, the tentative valuation of such properties has not yet been served by the Commission:

Name of Company Owning Property Operated by Southern Pacific Company as of the Date of Tentative Valuation	Date of Tentative Valuation
SOUTHERN PACIFIC STEAMSHIP LINES	
1. Southern Pacific Company	June 30, 1916
PACIFIC LINES	
2. Southern Pacific Company (Rail Lines)	June 30, 1916
3. Beaverton & Willsburg R. R. Co.	do
4. Central Pacific Ry. Co.	do
5. Coast Line Ry. Co.	do
6. Fresno Traction Co.	do
7. Hanford & Summit Lake Ry. Co.	do
8. Inter-California Ry. Co.	do
9. New Mexico & Arizona R. R. Co.	do
10. Oregon & California R. R. Co.	do
11. Peninsular Ry. Co.	do
12. Porterville Northeastern Ry. Co.	do
13. South Pacific Coast Ry. Co.	do
14. Southern Pacific R. R. Co.	do
15. Tucson & Nogales R. R. Co.	do

It is anticipated that tentative valuation of such properties will be served by the Commission on the Southern Pacific Company in the near future.

In addition to its transportation system lines, your Company solely controls ten other transportation companies owning steam and electric lines in the United States, each of which operates its own property. To December 31, 1926, tentative valuations had been served upon but three of such companies.

General

The dividends for the year on the capital stocks of the Southern Pacific Company and its Transportation System Companies held by the public, amounted to $22,343,004.32, as follows:

Dividends on capital stock of the Southern Pacific Company:	
1½ per cent. paid April 1, 1926	$5,585,713.58
1½ per cent. paid July 1, 1926	5,585,713.58
1½ per cent. paid October 1, 1926	5,585,713.58
1½ per cent. payable January 3, 1927	5,585,713.58
Total Southern Pacific Company	$22,342,854.32
Dividends on stocks of Transportation System Companies held by the public	150.00
Total dividend payments for the year	$22,343,004.32
The total taxes for the year amounted to	$21,476,810.65

Under the pension system put into effect January 1, 1903, there were carried on the pension rolls at the end of the year, 1,785 employees. The payments to pensioners for the year amounted to $1,004,740.25, equivalent to six per cent. per annum on an investment of $16,745,670.83.

The Board announces with sorrow the death, on June 24, 1926, of Mr. Cleveland H. Dodge, who served your Company as a Director from December 11, 1924, to the time of his death; and on December 20, 1926, of Mr. William R. Scott, President of the Texas and Louisiana Lines of your Company, who entered the service in 1903. Mr. Cleveland E. Dodge was elected a Director of your Company to fill the vacancy caused by the death of Mr. Cleveland H. Dodge; and Mr. A. D. McDonald was elected President of the Texas and Louisiana Lines to fill the vacancy caused by the death of Mr. W. R. Scott. Mr. McDonald will continue as Vice Chairman of your Company, his office remaining in New York. Mr. H. M. Lull has been elected Executive Vice President of the Texas and Louisiana Lines, with headquarters at Houston, Texas, and, under the direction of President McDonald, will have immediate charge of the management and operations of those lines.

The Board gratefully acknowledges its appreciation of the loyal and efficient services rendered by officers and employees during the year.

By order of the Board of Directors,

HENRY W. DE FOREST,
Chairman of the Executive Committee.

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Synopsis of Annual Report Reading Company, Calendar Year, 1926

PHILADELPHIA, Pa., March 24, 1927.

To the Stockholders of Reading Company:

The Board of Directors submits herewith its 29th Annual Report.

The income for the year ended December 31, 1926, was as follows:

	1926
Railway Operating Revenues	$99,290,135.50
Railway Operating Expenses	73,508,750.78
Net Revenue from Railway Operations	$25,781,384.72
Railway Tax Accruals	$5,531,266.19
Uncollectable Railway Revenues	5,740.05
Total Taxes and Uncollectable Railway Revenues	$5,537,006.24
Total Railway Operating Income	$20,244,378.48
Nonoperating Income	1,788,484.22
Net Railway Operating Income	$22,032,862.70
Other Nonoperating Income	4,836,688.48
Gross Income	$26,869,551.18
Deductions from Gross Income	8,338,429.47
Net Income	$18,531,121.71
Income Appropriated for Sinking Fund and Reserve Funds	$46,792.83
Income Appropriated for Investment in Physical Property	4,670,000.00
Total Appropriations of Income	$4,716,792.83
Income Balance Transferred to Profit and Loss	$13,814,328.88

Equipment

During the year 1926 the balance of the equipment mentioned in the 1925 report as having been contracted for, was delivered to the Company and placed in service.

Reading Company arranged during the year 1926 for the construction of the following additional equipment:

5 Pacific type Passenger Locomotives
25 Steel Passenger Coaches
5 Steel Combination Passenger and Baggage Cars
4 Steel Dining Cars
3 Gasoline Electric Motor Cars and 1 Trailer for Passengers, Baggage and Mail
1 25-ton Locomotive Crane
1 Steel Ram Car
10 Steel Caboose Cars
4 Steel Lighters
4 Steel Carfloats, 8-cars capacity each
2 Steel Carfloats, 10-cars capacity each
29 Fordson Tractors
26 Motor Cars for Section and Signal Department Forces.

Expenditures were also made during the year in the improving of the equipment of the Company, including installation of Exhaust Feed Water Heater Injectors on a number of Locomotives; conversion of one Mallet type Locomotive into Santa Fe type, and substituting electric for gas lighting in Passenger equipment.

Equipment Trust Obligations

At the close of the fiscal year ended December 31, 1926, there were outstanding Equipment Trust obligations to the extent of $15,400,000 issued by The Pennsylvania Company for Insurances on Lives and Granting Annuities, Trustee, and $6,375,000 issued by the Fidelity-Philadelphia Trust Company, Trustee, under the so-called Philadelphia Plan. These obligations were as follows:

Series	Outstanding Dec. 31, 1925	Payments During Year	Outstanding Dec. 31, 1926
F	$600,000	$600,000	$.....
G	1,350,000	900,000	450,000
H	950,000	190,000	760,000
I	4,200,000	600,000	3,600,000
J	5,820,000	830,000	4,990,000
K	6,400,000	800,000	5,600,000
L	7,125,000	750,000	6,375,000
	$26,445,000	$4,670,000	$21,775,000

Of the $21,775,000 Equipment Trust Certificates outstanding December 31, 1926, $14,495,000 were owned by Reading Company, and $1,814,000 by some of its subsidiary companies.

Grain Elevators

The new elevator building at 20th and Hamilton Streets, Philadelphia, to serve domestic grain trade and replacing a similar structure destroyed by fire on March 11, 1924, was completed and put in operation on March 22, 1926.

Work progressed satisfactorily upon the construction by The Philadelphia Grain Elevator Company of its modern concrete export grain elevator at Port Richmond, Philadelphia. This elevator with a present capacity of 2,500,000 bushels and costing approximately $4,000,000 is expected to be in operation in the summer of 1927.

Federal Valuation of Railroads

The physical valuation of Reading Company's property was continued during the year at a cost to the Company of $87,778.80.

The total expenditure incurred to December 31, 1926, on account of Federal Valuation of Reading Company's property under the Act of Congress approved March 1, 1913, was $998,660.63.

The tentative valuation report of the Interstate Commerce Commission found "the values for rate-making purposes, of the property of the Philadelphia and Reading, owned or used, devoted to common-carrier purposes," as of June 30, 1917, were $200,927,187. The report states, "The estimates of cost of reproduction covered by this report are based upon the 1914 level of prices, while the present values of the common-carrier lands covered by the report are based upon the fair average of the normal market value of land * * *, as of valuation date."

The railroad companies, controlled by Reading Company, exclusive of the Central Railroad Company of New Jersey, have each been valued separately, in a similar manner, as of June 30, 1917. The total amount reported for these roads is $22,797,120.

Protests have been filed with the Commission against these tentative valuations and a conference is now in progress between the representatives of this company and of the Commission in respect to these protests.

Resumption of Anthracite Mining

The suspension in the mining of anthracite in the territory served by Reading Company, which began on September 1, 1925, continued until February 18, 1926.

The suspension of anthracite mining, together with the cessation of coal mining in England, resulted in a greatly accelerated movement of bituminous coal for domestic and foreign consumption and accounts to a considerable extent for the heavy movement of that product over Reading Company's lines during the year.

The Gettysburg and Harrisburg Railway Company

With the approval of the Interstate Commerce Commission, under Finance Docket No. 5684, the $565,000 First Consolidated Mortgage Bonds of The Gettysburg and Harrisburg Railway Company, maturing October 1, 1926, were extended to October 1, 1956, with interest reduced from 5% to 4½% per annum. The payment of the principal and interest of the extended bonds has been duly guaranteed by Reading Company.

Philadelphia Perishable Products Terminal

Reading Company has joined with the Baltimore and Ohio Railroad Company in the erection of a warehouse, cold storage plant, delivery yard, and other extensive facilities at Delaware and Snyder Avenues, Philadelphia, for the handling of produce and fruits. The warehouse, which was formally opened on October 29, 1926, contains two auction rooms which are leased to the Philadelphia Auction Company.

The cold storage building, consisting of eight floors and basement, also contains facilities for conducting private auctions on the first floor. The balance of the building will be leased to the Quaker City Cold Storage Company. This plant will be equipped with the most modern refrigerating machinery and other devices for the efficient handling of perishable freight.

Warrants

The Board of Directors of Reading Company on October 28, 1926, adopted the following resolution:

"WHEREAS, the time for the payment of the amount due upon Reading coal rights will expire January 1, 1927, in accordance with the decree of the United States District Court for the Eastern District of Pennsylvania, and it is not the intention of Reading Company to ask for an extension of the time within which such payments may be made.

"RESOLVED, that notice be sent to all holders of record of Reading coal rights advising them that payment should be made at the rate of two dollars for each right so held

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prior to January 1, 1927, to entitle the holder thereof to receive certificates of interest in the stock of Philadelphia and Reading Coal and Iron Corporation. The time for the conversion of such certificates of interest into stock of Philadelphia and Reading Coal and Iron Corporation, in accordance with the terms of the decrees of the United States District Court heretofore entered, is until July 1, 1927."

Warrants had been exchanged to December 31, 1926, for Certificates of Interest in 1,393,870 shares of the Philadelphia and Reading Coal and Iron Corporation, leaving a balance of 6,130 to be exchanged on January 1, 1927.

General Mortgage of Reading Company and the Philadelphia and Reading Coal and Iron Company

During the year 1926 the outstanding joint General Mortgage 4% bonds of Reading Company and The Philadelphia & Reading Coal and Iron Company, dated January 5, 1897, were reduced to $398,000, through exchanges for the new separate bonds of the two Companies in accordance with the Plan of Segregation.

Funded Obligations

Changes have occurred in the funded obligations of the Company during the year 1926, as follows:

Mortgage and Collateral Trust Bonds outstanding December 31, 1925		$114,242,040.98
General and Refunding Mortgage 4½% bonds issued account similar amount of General Mortgage 4's surrendered	$131,333.34	
Real Estate Mortgages existing on properties purchased during year..	53,000.00	
		184,333.34
		$114,426,374.32

Reading Company's proportion of joint General Mortgage 4% bonds of Reading Company and The Philadelphia and Reading Coal and Iron Company, dated January 5, 1897, surrendered for exchange under the Plan of Segregation..	131,333.34
On December 31, 1926, Bonds outstanding were..	$114,295,040.98

Lehigh and New England Railroad

In order to secure improved facilities for the public and greater economy in the movement of traffic between the territory served by Reading Company and its various connecting lines, and New England points, Reading Company entered into an agreement, subject to approval of the Interstate Commerce Commission, with the Lehigh and New England Railroad Company for the lease of the railroad of the latter Company for a period of 999 years from January 1, 1927. Formal application for the approval by the Interstate Commerce Commission of the proposed lease was filed on July 7, 1926, under Finance Docket No. 5639. A hearing on the application was held before the Commission's Examiner on September 8, 1926. The Examiner in his report filed November 12, 1926, recommended to the Commission that the application be approved. Exception having been filed to the report of the Examiner, argument thereon was set for January 7, 1927, before Division 4 of the Commission. (Since the close of the year, or on March 2, 1927, an order was entered by Division 4 of the Commission denying the application.)

The Management again records its appreciation of the faithful and efficient services rendered by the officers and employees of the Company during the past year.

By order of the Board of Directors.

AGNEW T. DICE, *President.*

General Balance Sheet December 31, 1926

ASSETS

INVESTMENTS:		
Investment in road and equipment		$282,643,870.55
Improvements on leased railway property		26,260,004.59
Deposits in lieu of mortgaged property sold		951,885.17
Miscellaneous physical property		13,541,703.03
		$323,397,463.34
INVESTMENTS IN AFFILIATED COMPANIES		$40,216,721.90
OTHER INVESTMENTS		$39,034,444.93
Total Investments		$402,648,630.17
CURRENT ASSETS:		
Cash		$9,440,431.79
Other current assets		15,322,713.76
Total Current Assets		$24,763,145.55
DEFERRED ASSETS		$811,237.63
UNADJUSTED DEBITS		$3,593,580.17
Grand Total		$431,816,593.52

LIABILITIES

STOCK:	Book Liability	Held by or for Company	
First preferred	$28,000,000.00	$8,800.00	$27,991,200.00
Second preferred	42,000,000.00	29,350.00	41,970,650.00
Common	70,000,000.00	10,900.00	69,989,100.00
Total Stock	$140,000,000.00	$49,050.00	$139,950,950.00
LONG-TERM DEBT:			
Funded debt secured by mortgage	$160,270,374.32	$68,798,333.34	$91,472,040.98
Funded debt secured by stock collateral	24,295,000.00	1,472,000.00	22,823,000.00
Equipment trust obligations	21,775,000.00	14,495,000.00	7,280,000.00
Total Funded Debt Unmatured	$206,340,374.32	$84,765,333.34	$121,575,040.98
Nonnegotiable debt to affiliated companies			325,550.03
Total Long-Term Debt			$121,900,591.01
CURRENT LIABILITIES:			
Traffic and car-service balances payable			$3,800,599.62
Audited accounts and wages payable			6,570,858.20
Interest matured unpaid			1,405,305.69
Unmatured dividends declared			3,219,270.50
Other current liabilities			1,648,638.27
Total Current Liabilities			$16,644,672.28
DEFERRED LIABILITIES			$205,570.68
UNADJUSTED CREDITS:			
Tax liability			$6,586,106.48
Insurance and casualty reserves			1,065,245.40
Accrued depreciation—Road			3,715,458.63
Accrued depreciation—Equipment			42,275,460.61
Other unadjusted credits			442,248.33
Total Unadjusted Credits			$54,084,519.45
CORPORATE SURPLUS:			
Additions to property through income and surplus			$87,072,146.45
Funded debt retired through income and surplus			1,738,000.00
Total Appropriated Surplus			$88,810,146.45
Profit and loss credit balance			$10,220,143.65
Total Corporate Surplus			$99,030,290.10
GRAND TOTAL			$431,816,593.52

PROFIT AND LOSS ACCOUNT
For Year Ended December 31, 1926

	Dr.	Cr.
Credit balance December 31, 1925		$8,032,678.53
Balance transferred from income for the year ended December 31, 1926		13,814,328.88
Profit on road and equipment sold		13,665.09
Unrefundable overcharges		35,958.32
Donations for construction of sidings		26,279.84
Miscellaneous credits		179,347.32
Dividend appropriations of surplus	$9,797,384.00	
Surplus appropriated for investment in physical property	26,279.84	
Debt discount extinguished through surplus	3,600.00	
Loss on retired road and equipment	405,258.24	
Miscellaneous debits	1,649,592.25	
Credit balance December 31, 1926	10,220,143.65	
Total	$22,102,257.98	$22,102,257.98

[ADVERTISEMENT]

Railway Finance

(*Continued from page* 1157)

good start we have made, and I am confident the next three months will equal those of last year. But the big months are September, October and November, and the results to be turned in during those periods will provide the important feature of the year's operations."

ATLANTIC COAST LINE.—*Bonds.*—The Interstate Commerce Commission has authorized an issue of $8,809,000 of general unified 50-year 4½ per cent bonds, to be sold at not less than 94½.

BANGOR & AROOSTOOK.—1926 *Earnings.*—As previously reported the annual report for 1926 shows net income after interest and other fixed charges of $914,325 equivalent after allowance for 7 per cent dividends on the preferred stock to $8.68 a share on the $50 par value common stock. Net income in 1925 was $723,628 or $6.21 a share. Selected items from the income statement follow:

Bangor & Aroostock

	1926	1925
Average mileage operated	866.50	869.02
Railway operating revenues	$6,927,603	$6,862,488
Maintenance of way	$1,143,112	$1,268,914
Maintenance of equipment	1,447,214	1,410,353
Transportation	1,866,829	1,888,222
Total operating expenses	$4,289,408	$4,913,867
Operating ratio	69.71	71.60
Net revenue from operations	$2,098,195	$1,948,621
Railway tax accruals	551,405	569,798
Railway operating income	$1,545,502	$1,376,181
Hire of freight cars—Net Cr.	332,716	327,196
Net railway operating income	Not shown	
Non-operating income	$413,062	$398,819
Gross income	$1,958,564	$1,775,000
Interest on funded debt	1,023,942	1,031,651
Total deductions from gross income	$1,044,238	$1,051,372
Net income	$914,325	$723,628

BUFFALO & SUSQUEHANNA CORPORATION.—1926 *Earnings.*—Annual report for 1926 shows net income after interest and other fixed charges of $124,321 equivalent to $3.10 a share on the 4 per cent preferred stock. Net income in 1925 was $79,033 or $1.97 a share on the preferred stock. Selected items from the income statement follow:

Buffalo & Susquehanna Corporation

	1926	Increase or decrease
Railway operating revenues	$1,307,499	—$155,816
Maintenance of way	$326,584	—$18,127
Maintenance of equipment	494,876	—67,388
Transportation	444,660	—26,177
Total operating expenses	$1,386,305	$123,667
Net revenue from operations—Def.	$78,805	—$32,149
Railway tax accruals	26,130	—10,316
Railway operating income—Def.	$105,020	—$21,894
Hire of freight cars—Cr.	181,346	—40,128
Joint facility rents—Dr.	26,747	316
Net railway operating income	Not shown	
Non-operating income	$460,220	$61,613
Gross income	$355,200	$39,720
Interest on funded debt	188,833	—5,492
Total deductions from gross income	$230,878	—$5,569
Net income	$124,322	$45,289

CAROLINA, CLINCHFIELD & OHIO.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $1,500,000 first and consolidated mortgage gold bonds, series B, for the purpose of refunding by exchange $1,500,000 Holston Corporation 5 per cent realty and collateral trust convertible notes which matured April 1, 1926. Authority was also granted to the Atlantic Coast Line and Louisville & Nashville, as lessees, to assume obligation and liability.

CHESAPEAKE & OHIO.—*Motion to Strike Out Intervening Petitions Denied.*—The Interstate Commerce Commission has denied a motion asking it to strike from the record petitions filed on behalf of the minority stockholders for leave to intervene in the proceedings on the application for authority to acquire control of the Erie and Pere Marquette. The commission had already granted the leave to intervene.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Incorporation.*—Articles of incorporation for this company, the reorganized Chicago, Milwaukee & St. Paul, were filed at Madison, Wis., on March 31. In order to encourage the company to reincorporate in Wisconsin, the legislature of that state passed a bill providing that the incorporation fees would be assessed only on the amount by which the capitalization was increased, rather than on the total capitalization. The bill also provided for the issuance of common stock having no par value. John J. McCloy, New York, has been appointed temporary president of the new organization, for purposes of incorporation. Other officers appointed, all of whom are temporary, are William O. Douglas, New York, and R. Gilbert Bundy, Milwaukee, Wis., vice-presidents; Gordon E. Youngman, New York, secretary; Frederick N. Edwards, New York, treasurer; Rodger M. Trump, Milwaukee, and Alfred McCormack, New York, assistant secretaries. The articles of incorporation were filed with 5,021,721 shares of stock, of which 2,923,804 shares are preferred stock of a par value of $100 and 2,097,917 shares are common stock without par value.

DENVER & RIO GRANDE WESTERN.—1926 *Earnings.*—Annual report for 1926 shows net income after interest and charges for sinking fund on equipment trusts and general mortgage bonds but before allowance for the unpaid interest on the general mortgage bonds, of $3,346,203 equivalent after allowance for the interest on the general mortgage bonds to $11.28 a share of preferred stock. Net income in 1925 was $2,562,986 or $6.52 a share on the preferred. Selected items from the income statement follow:

Denver & Rio Grande Western

	1926	1925
Average mileage operated	2,562.93	2,570.59
Railway operating revenues	$34,030,309	$33,629,463
Maintenance of way	$5,899,265	$5,742,197
Maintenance of equipment	6,242,158	5,948,303
Transportation	10,304,180	10,835,670
Total operating expenses	$24,614,314	$24,794,249
Operating ratio	72.33	73.73
Net revenue from operations	$9,415,995	$8,835,215
Railway tax accruals	2,430,000	2,316,092
Railway operating income	$6,981,822	$6,501,738
Equipment rents	Cr. 335,224	Dr. 27,789
Joint facility rents—Net Cr.	292,755	274,835
Net railway operating income	$7,609,801	$6,758,785
Non-operating income	95,868	21,511
Gross income	$7,843,350	$6,938,219
Available for interest	7,705,669	6,780,296
Interest and sinking funds*	4,359,466	4,217,310
Net income	$3,346,203	$2,562,986

*Excludes $1,490,400 interest on general mortgage.

GRAYSONIA, NASHVILLE & ASHDOWN.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $100,000 first mortgage gold bonds in lieu of a like amount of general mortgage bonds previously authorized.

HILLSBORO & NORTH-EASTERN.—*Securities.*—The Interstate Commerce Commission has approved an issue of $60,000 first mortgage 6 percent bonds and $25,415 of short term notes, the bonds to be sold or exchanged for existing indebtedness at par and a commission of not more than 5 percent to be paid in connection therewith.

MACON & BIRMINGHAM.—*Sold.*—This road which has not been operated for several years and which formerly had a line from Macon, Ga., to LaGrange, was sold at auction in four parcels for $212,000 at Macon on April 5.

NORTHERN CENTRAL.—*Bonds.*—The Interstate Commerce Commission has authorized this company to reduce the interest rate from 5 per cent to 4½ per cent on $5,231,000 general and refunding mortgage bonds, series A, heretofore authorized to be issued to the Pennsylvania. Authority has also been granted to the Pennsylvania to assume obligation and liability, as lessee, in respect of said bonds, and to sell them to Kuhn, Loeb & Co. at not less than 94¼ per cent of par and accrued interest, the proceeds to be used to reimburse its treasury.

PANHANDLE & SANTA FE.—*Lease.*—The Interstate Commerce Commission has authorized this company to renew its lease from January 1, 1927, of the Pecos River.

PENNSYLVANIA.—1926 *Earnings.*—Annual report for 1926 shows net income after interest and other fixed charges of $67,567,958 equivalent to $6.77 per share or 13.53 per cent on the company's $50 par value stock. Net income in 1925 was $62,220,324 or $6.23 per share. Selected items from the income statement follow:

Pennsylvania

	1926	Increase or decrease
Average mileage operated	10,594.01	11.67
Railway operating revenues	$709,817,450	$37,680,488
Maintenance of way	$92,362,198	$7,358,781
Maintenance of equipment	161,880,739	—152,824
Transportation	259,815,202	14,588,734

Total operating expenses	$550,360,578	$23,221,231
Operating ratio.....	77.6	—0.9
Net revenue from operations	$159,456,872	$14,459,256
Railway tax accruals.	37,110,193	5,409,404
Railway operating income	$122,085,068	$9,068,104
Equipment rents—Dr.	14,921,271	2,197,310
Joint facility rents—Dr.	731,039	546,045
Net railway operating income	$106,432,757	$6,324,750
Non-operating income	39,890,036	2,608,546
Gross income.....	$146,322,793	$8,933,296
Rent for leased roads	45,927,919	1,541,970
Interest on funded debt	30,013,723	1,752,682
Total deductions from Gross income.....	$78,754,835	$3,585,662
Net income.....	$67,567,958	$5,347,634
Sinking and other reserve funds.....	$4,108,483	$179,178
Dividends	32,451,339	2,500,935
Surplus for year carried to profit and loss...	$30,270,966	$4,377,981

PERE MARQUETTE.—*Stock Dividend.*—Directors, meeting in New York on April 6, voted a 20 per cent stock dividend on the common stock. A special meeting of the stockholders will be held on May 18 at Detroit to ratify an increase in the number of common shares outstanding from 450,460 to 540,552 or the equivalent of $9,009,200 par value.

READING COMPANY.—1926 *Earnings.*—Annual report for 1926 shows net income after interest and other fixed charges of $18,531,122 equivalent after payment of the 4 per cent dividends on the first and second preferred stocks to $11.24 a share on the $50 par value common. Net income in 1925 was $17,159,619 or $10.23 a share. See excerpts from annual report on adjoining pages.

SEABOARD AIR LINE.—*Bonds.*—The Interstate Commerce Commission has authorized the Brooksville & Inverness to issue $118,000 first mortgage 6 per cent bonds, series A, to be delivered to the Seaboard Air Line in partial repayment of advances. The Seaboard Air Line has been authorized to issue the same amount of first and consolidated mortgage bonds, series A, to be pledged as collateral security for short-term notes. The purpose of this issue is to reimburse the company's treasury for expenditures made acquiring Brooksville & Inverness bonds.

SOUTHERN PACIFIC.—*Annual Report.*—Annual Report for 1926 shows net income after interest and other fixed charges of $38,791,373 equivalent to $10.42 a share on the company's stock. Net income in 1925 was $35,657,410 or $9.57 a share. See excerpts from the annual report on adjoining pages.

SOUTHERN RAILWAY.—1926 *Earnings.*—As previously reported the annual report Annual report for 1926 shows net income after interest and other fixed charges of $38,791,373 equivalent to $10.42 a share on the company's stock. Net income in 1925 was $35,657,410 or $9.57 a share. See excerpts from the annual report on adjoining pages.

VIRGINIAN.—*Annual Report.*—As previously reported the annual report for 1926 shows net income after interest and other fixed charges of $6,717,047 equivalent after allowance for dividends on the preferred stock to $16.12 a share on the common. Net income in 1925 was $3,859,777 or $6.98 a share. Selected items from the income statement follow:

Virginian

	1926	1925
Railway operating revenues	$23,878,539	$18,862,179
Maintenance of way.	$3,052,952	$2,700,209
Maintenance of equipment	4,456,406	4,102,491
Transportation	5,196,932	4,462,199
Total operating expenses	$13,239,669	$11,769,481
Net revenue from operations	$10,638,870	$7,092,697
Railway tax accruals.	1,689,100	1,288,048
Railway operating income	$8,948,978	$5,789,017
Equipment rents—Cr.	852,895	622,618
Net railway operating income	not shown	
Gross income.....	$10,840,875	$7,738,163
Interest on funded debt	2,767,200	2,486,992
Total deductions from gross income.....	$4,123,828	$3,878,385
Net income.....	$6,717,047	$3,859,777

WESTERN PACIFIC.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $2,950,000 first mortgage 5 per cent gold bonds, series A; said bonds to be exchanged for series B bonds at not less than 99.5 per cent of par and accrued interest. The purpose is to have all the bonds under the mortgage of the same tenor as to interest and terms of redemption.

Average Price of Stocks and Bonds

	Apr. 5	Last week	Last year
Average price of 20 representative railway stocks	110.30	108.48	88.91
Average price of 20 representative railway bonds	101.23	100.27	94.32

Valuation Reports

The Interstate Commerce Commission has issued final valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes as of the respective valuation dates as follows:

Final Reports

Pearl River Valley.....	$158,000	1919
Detroit & Mackinac.....	6,559,700	1917
Nevada Central.....	547,916	1917
Waynesburg & Washington..	686,630	1917

Dividends Declared

Atchison, Topeka & Santa Fe.—Common $1.75, quarterly; common, $.75, extra, both payable June 1 to holders of record May 6.

Baltimore & Ohio.—Common, 1½ per cent, quarterly; preferred, 1 per cent, quarterly, both payable June 1 to holders of record April 16.

Carolina, Clinchfield & Ohio.—$.75, quarterly, stamped certificates, 1¼ per cent, both payable April 10 to holders of record March 31.

Delaware, Lackawanna & Western.—$1.50, quarterly, payable April 20 to holders of record April 9.

Norfolk & Western.—Adjustment preferred, $1.00, quarterly, payable May 19 to holders of record April 30.

Pennsylvania Company.—1½ per cent, quarterly, payable March 31 to holders of record March 23.

Pittsburgh & West Virginia.—Common, 1½ per cent, quarterly, payable April 30 to holders of record April 12.

Wabash.—Preferred A, $1.25, quarterly, payable May 25 to holders of record April 16.

Officers

Executive

L. T. Martin, commissioner of the Temiskaming & Northern Ontario since 1921, with headquarters at Ottawa, Ont., has been appointed vice chairman.

E. J. Weber, car accountant on the Maryland & Pennsylvania, with headquarters at Baltimore, Md., has been advanced to assistant to the president, with the same headquarters. Mr. Weber will also continue to act as car accountant.

Michael J. Curry, office manager for the traffic manager of the Southern Pacific at Chicago, has been elected vice-president of the Western Pacific, with headquarters at New York, with the duties of assistant secretary and assistant treasurer, succeeding **S. C. Matthews,** assistant secretary and assistant treasurer. Mr. Curry was born on September 30, 1879, at Syracuse, N. Y., and entered railway service in 1898 as a clerk and stenographer on the Rome, Watertown & Ogdensburg (now a part of the New York Central). In 1903 he became a clerk and stenographer in the general passenger department of the Chicago, Rock Island & Pacific at Chicago, serving successively until 1914 as secretary to the passenger traffic manager and secretary to the third vice-president. He was then appointed secretary to the chairman of the board of directors at New York where he remained until October, 1915, when he was appointed secretary to the president of the El Paso & Southwestern. After two years in this position he spent four months as general agent of the E. P. & S. W. at Detroit and on May 1, 1918, he became chief clerk to the president. Mr. Curry was advanced to assistant to the president on March 1, 1920, leaving that company on January 1, 1925, to become assistant to the executive vice-president of the Southern Pacific at New York. He came to Chicago as

M. J. Curry

office manager for the traffic manager of the Southern Pacific on June 1, 1925, where he remained until his election as vice-president of the Western Pacific.

Financial, Legal and Accounting

M. F. Harden has been appointed general auditor and assistant treasurer of the Florida East Coast, and will have charge of all accounting and auditing, reporting to the board of directors through the vice-president and treasurer. **T. V. Pomar,** assistant treasurer and comptroller at St. Augustine, Fla., has been granted a six months' leave of absence, at his own request.

Operating

R. H. Dwyer has been appointed superintendent of the Northern Kansas division of the Missouri Pacific, with headquarters at Atchison, Kan., upon his return from a leave of absence, succeeding **R. E. Cahill,** who has resumed his former duties as division engineer at the same point.

J. F. Anton, superintendent of the Slaton division of the Panhandle & Santa Fe, with headquarters at Slaton, Tex., has been appointed superintendent of the New Mexico division of the Atchison, Topeka & Santa Fe, with headquarters at Las Vegas, N. M. **J. C. Barton,** assistant superintendent on the Santa Fe, with headquarters at Wellington, Kan., has been appointed superintendent of the Slaton division succeeding Mr. Anton.

M. B. Lamb, superintendent of the Hannibal division of the Chicago, Burlington & Quincy, with headquarters at Hannibal, Mo., has been transferred to the Creston division, with headquarters at Creston, Iowa, succeeding **F. E. Haines,** who has been transferred to the McCook division, with headquarters at McCook, Neb., where he will replace **L. C. McBride,** transferred to succeed Mr. Lamb at Hannibal. **L. E. Caldwell,** who was on the general manager's staff of the Lines west of the Missouri River at Omaha, Neb., has been promoted to superintendent of the Omaha division, with headquarters at the same point, succeeding **C. J. Connett,** who has been transferred to the Ottumwa division, with headquarters at Ottumwa, Iowa, to replace **O. C. Hibbs,** resigned. **M. C. Hughes,** assistant superintendent of the Beardstown division, with headquarters at Centralia, Ill., has been transferred to the Ottumwa division, with headquarters at Burlington, Iowa. **J. L. Mulroy,** trainmaster on the La Crosse division at La Crosse, Wis., has been promoted to assistant superintendent of the same division, with headquarters at the same point.

T. Joseph Jelbart, who has been appointed superintendent of passenger transportation of the Pennsylvania, with headquarters at Pittsburgh, Pa., was born on May 2, 1883, at Reynoldsville, Pa., and was graduated from the Johnsonburg, Pa., High School in 1901 and attended Allegheny College from 1904 until 1906. He entered railway service on January 1, 1906, as supervisor's clerk on the Pennsylvania. On November 18 of the same year he was appointed master carpenter's clerk and on June 1, 1907, was advanced to chainman on the en-

T. J. Jelbart

gineering corps. He became track foreman at Kane, Pa., on February 10, 1910, and assistant yardmaster at Ridgway, Pa., on October 12, 1913. He was advanced to yardmaster at Renovo, Pa., on April 16, 1917, and the following November was appointed assistant trainmaster at Erie, Pa. Mr. Jelbart became trainmaster at the same place on December 1, 1920, and was transferred to Buffalo, N. Y., in the same capacity on November 16, 1925, which position he was holding at the time of his recent appointment as superintendent of passenger transportation.

Richard K. Bradford, who has been promoted to superintendent of transportation of the Denver & Rio Grande Western, with headquarters at Denver, Colo., was born on May 30, 1896, at Pine Bluff, Ark., and attended Randolph Macon Academy. Mr. Bradford entered railway service at the age of 17 as a mail and file clerk on the Chicago, Rock Island & Pacific at Des Moines, Iowa. Subsequently he served on the Rock Island as secretary to the superintendent and as dispatcher's clerk at Cedar Rapids, Iowa and as assistant accountant at Little Rock, Ark., until July, 1915, when he became chief clerk to the assistant superintendent of the St. Louis Southwestern at Pine Bluff, Ark. Mr. Bradford later acted as chief clerk to the general claim agent and as general car distributor at Pine Bluff, returning to the Rock Island as secretary to the superintendent at Little Rock in October, 1916. From December, 1916, to December, 1917, he served successively as secretary to the assistant general manager at El Reno, Okla., and as car distributor at Little Rock and he then enlisted in the United States Air Service where he remained as a sergeant until February, 1919. From that time until April, 1923, he was with the Rock Island successively as assistant chief clerk to the superintendent at Little Rock, as livestock claim agent at Little Rock, as secretary to the general manager at Chicago, as secretary and chief clerk to the vice-president at Chicago and as trainmaster on the Chicago, Rock Island & Gulf at Amarillo, Tex. He was then appointed as a staff officer and assistant to the receiver of the D. & R. G. at Denver. After the reorganization of this company in December, 1924, he was appointed assistant to the general manager and in March of the following year he was promoted to assistant superintendent of transportation. In November, 1926, Mr. Bradford was again promoted to assistant general superintendent of transportation, a position he held until his further promotion to superintendent of transportation.

Traffic

Alan DuQuesnay has been appointed district freight agent of the Lake Erie and Western district of the New York, Chicago & St. Louis, with headquarters at Memphis, Tenn.

Edwin L. Jennings, general agent in the freight department of the Michigan Central at Detroit, Mich., has been promoted to assistant general freight agent, with headquarters at the same point.

Reginald P. Paterson, who has been promoted to assistant freight traffic manager of the Pere Marquette, with headquarters at Detroit, Mich., was born in Waterloo county, Ont., and entered railway service on September 15,

R. P. Paterson

1890, as a stenographer and clerk in the general freight department of the Chicago & West Michigan. After occupying various positions in the freight department of this railroad and the Detroit, Grand Rapids & Western he was appointed chief tariff clerk of the Pere Marquette, which absorbed both companies in 1900. Two years later Mr. Paterson was appointed chief claim clerk and in 1903 he became chief clerk in the traffic department where

he remained until September 1, 1910, when he was promoted to assistant general freight agent at Detroit. On March 1, 1920, Mr. Paterson was again promoted to general freight agent, with headquarters at Detroit, a position he held until his further promotion to assistant freight traffic manager.

E. L. Hoppel, livestock agent on the Northern Pacific at Spokane, Wash., has been promoted to general livestock agent, with headquarters at St. Paul, Minn., succeeding **A. J. Davies,** deceased.

E. B. Hoskins has been appointed assistant general freight agent of the Long Island, with headquarters at New York. **L. M. Thorpe** has been appointed special agent in the general freight department.

Edwin T. Reynolds, who has been promoted to general freight agent of the Pere Marquette, with headquarters at Detroit, Mich., is a native of Canada, having entered railway service as a telegraph operator and relief agent on the Grand Trunk. In 1901 he was transferred to the local freight office at Buffalo, N. Y., and his connection with the Pere Marquette began in 1905 when he was appointed chief clerk to the general agent of the Pere Marquette at Buffalo. Mr. Reynolds became a traveling freight agent, with headquarters at New York, in the following year and in 1908 he was appointed eastbound agent, with the same headquarters. He was promoted to commercial agent at Pittsburgh, Pa., in 1914 where he remained until May, 1918, when all offline agencies were closed. During federal control he was assigned to the treasury departments of the Pere Marquette and the Grand Trunk, leaving railway service in 1919 to become traffic manager of C. H. Wills & Co., Marysville, Mich. Mr. Reynolds returned to the Pere Marquette in March, 1922, as general agent and on July 1, 1924, he was promoted to assistant general freight agent at Detroit, where he remained until his further promotion to general freight agent.

E. T. Reynolds

J. W. Monahan, commercial agent of the Chicago, Burlington & Quincy at Los Angeles, Cal., has been promoted to general agent at San Francisco, Cal., succeeding **H. van Swearingen,** voluntarily retired from active service.

Charles E. McCullough, who has been appointed general passenger agent of the Pennsylvania, with headquarters at Washington, D. C., was born on May 25, 1878, at Holden, Mo., and was educated in the public schools of St. Paul, Minn., and at Georgetown University (Law), Washington, D. C., from which institution he was graduated with the degree of L.L.B. in 1906. He entered railway service in 1893 as an office boy in the general passenger department of the Great Northern and remained with that company until the following year. During 1894 and 1895, Mr. McCullough served as a mail clerk on the Trans-Missouri Committee at Kansas City, Mo., and from the latter date until 1898, served consecutively on the Memphis & Charleston (now a part of the Southern) as clerk in the general passenger office at Memphis, Tenn.; assistant city ticket agent and station ticket agent, with the same headquarters. He then served on the Southern as rate and division clerk in the passenger department at Washington, D. C., until 1906. Mr. McCullough entered the service of the Pennsylvania as rate clerk on September 1, 1906, and was appointed tourist agent on December 1, 1909, and district passenger agent at Newark, N. J., on March 1, 1913. He became district passenger agent at Brooklyn, N. Y., on February 1, 1917. From August, 1917, until June 17, 1919, he served in the United States Army. He enlisted as a private in the infantry and attended the officers training camp at Fort Myers, Va. He was later commissioned a first lieutenant in the signal corps of the aviation section and was then promoted to captain in the air service. He returned to the service of the Pennsylvania as district passenger agent at New York City on July 1, 1919, and was advanced to division passenger agent at Baltimore, Md., on November 1, 1920. Mr. McCullough became division passenger agent at New York on November 1, 1923, and assistant general passenger agent at Washington, D. C., on March 1, 1926, which position he was holding at the time of his recent appointment as general passenger agent.

C. E. McCullough

A. Brostedt has been appointed Asiatic traffic manager of the Canadian National, with headquarters in the Asiatic Building, Queens Road, Hong Kong, with general supervision over the traffic interests of this company in the Orient and the Far East. The position of general traffic agent at Hong Kong has been abolished.

C. B. Stovall, district freight agent for the New York, Chicago & St. Louis at Memphis, Tenn., has been promoted to general agent in the freight department in charge of a newly established office at Birmingham, Ala. **J. D. Rabbitt,** traveling freight agent at Little Rock, Ark., has been promoted to general agent in the freight department at the same point, succeeding **J. T. Webb,** deceased.

Mechanical

Charles W. Quinn has been appointed mechanical inspector of the Boston & Maine, with headquarters at Boston, Mass., succeeding **James S. Clarke,** promoted.

Engineering, Maintenance of Way and Signaling

E. E. McLellan, engineer maintenance of way of the Maryland & Pennsylvania, with headquarters at Baltimore, Md., has been appointed chief engineer, with the same headquarters. The position of engineer maintenance of way has been abolished.

William J. Backes, who has been appointed chief engineer of the Boston & Maine, with headquarters at Boston, Mass., was born on April 29, 1879, at Hartford, Conn., and was graduated from the Sheffield Scientific School in 1899 with the degree of B. S. He received the degree of C. E. from the Pennsylvania Military College in 1919. Mr. Backes entered railway service in July, 1899, and until September, 1900, was consecutively rodman and leveler on the Mexican International. From September, 1900, until December, he was assistant foreman of the American Dry-Kiln Company, Mexico, and from February, 1901, until May, 1902, was assistant on the engineering corps of the Pennsylvania, lines West of Pittsburgh. In July, 1902, Mr. Backes became transitman on the Pennsylvania, which position he held until July, 1903. From the latter date until April, 1905, he served in the same capacity on the New York, New Haven & Hartford. In 1905 he was appointed assistant engineer on the construction of the Pennsylvania terminal in New York. He became chief engineer of the Central New England in 1906, which position he held until March 1, 1913, when he

became engineer maintenance of way of the same road and of the New York, New Haven & Hartford. In December, 1923, Mr. Backes was appointed assistant general manager of the New York, New Haven & Hartford, and in February, 1926, was appointed engineer maintenance of way of the Boston & Maine, which position he was holding at the time of his recent appointment.

Purchases and Stores

W. A. Prueit has been appointed stationery storekeeper of the Chesapeake & Ohio, with headquarters at Richmond, Va., succeeding **W. B. Smethie,** resigned.

H. O. Wolfe, assistant general storekeeper of the Chicago & Alton, with headquarters at Bloomington, Ill., has been advanced to general storekeeper, with headquarters at the same point, succeeding **F. C. Riley,** who has been given a leave of absence because of ill health. **E. L. Murphy,** traveling storekeeper at Bloomington, has been appointed assistant general storekeeper succeeding Mr. Wolfe.

Obituary

Frank C. Board, general agent for the Chicago, Burlington & Quincy, died on March 30, at his home in Detroit, Mich., following an attack of heart disease.

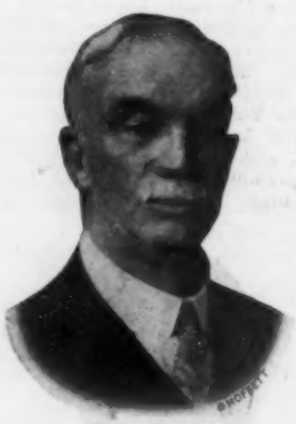
John Mackenzie, retired superintendent of motive power of the New York, Chicago & St. Louis, of 2468 Arlington Road, Cleveland, Ohio, died on March 19, in St. Petersburg, Fla. Mr. Mackenzie was a past president of the Central Railway Club and was also a past president of the Master Mechanics' Association. He was instrumental in the drafting and adopting of the present rules of interchange by the master mechanics and master car builders quite a few years ago.

Roy Lamberson Wyman, supervising lumber inspector for the United States Railroad Administration during federal control and lumber purchasing agent for the Spokane, Portland & Seattle from 1912 to 1917, died on February 2, at Portland, Ore., at the age of 52 years. Mr. Wyman was considered as an authority on tie specifications and in 1921 he left the S. P. & S. to aid in the organization of the Wyman Inspection Bureau to inspect lumber and ties for a number of Eastern railroads, with which he was actively engaged at the time of his death. In connection with this inspection bureau he acted as lumber purchasing agent for the Utah Copper Company and affiliated railroads, including the Bingham & Garfield, the Nevada Northern and the Ray & Gila Valley.

Walter S. Keenan, general passenger agent of the Gulf, Colorado & Santa Fe, with headquarters at Galveston, Tex., for nearly 34 years, died on April 2 at St. Mary's Infirmary, Galveston, after an illness of about six months. Mr. Keenan was born on December 30, 1858, at Camp Kent, Ill., and attended the State Normal School at Kirksville, Mo., entering railway service in 1877 as an office boy in the passenger department of the Chicago & Alton. He became a clerk in the auditor's office three years later and on April 1, 1881, he was appointed a rate clerk in the passenger department of the St. Louis, Iron Mountain & Southern (now a part of the Missouri Pacific). For the next 11 years Mr. Keenan served in this capacity, as advertising clerk in the passenger department of the Missouri Pacific, as rate clerk in the passenger department of the Michigan Central at Chicago and as rate clerk, chief clerk, traveling passenger agent, and general traveling agent on the Chicago, Burlington & Quincy at Chicago. He was then, on April 6, 1892, appointed chief clerk to the passenger traffic manager of the Atchison, Topeka & Santa Fe at Chicago, becoming general passenger agent of the Gulf, Colorado & Santa Fe at Galveston on June 1, 1893, which position he held until his death.

George H. Crosby, former assistant to the vice-president in charge of traffic of the Chicago, Burlington & Quincy, who died on March 30, at St. Louis, Mo., was born on September 23, 1855, at Hillsboro, Ill. He entered railway service at the age of 17 with the Hannibal & St. Joseph (now a part of the Burlington) at Hannibal, Mo., and after four years with this railroad he became a claim clerk in the general freight office of the Chicago, Burlington & Quincy. On November 1, 1877, he became a claim clerk on the International & Great Northern at Palestine, Tex., returning to the general freight office of the Burlington at Chicago, early in the following year. In June, 1878, he was appointed chief clerk in the general freight office of the Hannibal & St. Joseph at Hannibal, where he remained until June 1, 1880, when he was appointed to a similar position on the Burlington at Chicago. The next year Mr. Crosby was appointed general freight agent of the Kansas City, St. Joseph & Council Bluffs (now a part of the Burlington) at St. Joseph, Mo., and on July 1, 1883, he became first assistant general freight agent and general agent of the Burlington & Missouri River (also merged into the Burlington) at Denver, Colo. For the 12 years following January, 1890, he served as general freight agent of this company, at the end of which time he was appointed assistant freight traffic manager of the Burlington, with headquarters at Chicago. In February, 1905, Mr. Crosby was promoted to freight traffic manager, with headquarters at the same point, where he remained for 15 years. During federal control he was in addition freight traffic manager of the Quincy, Omaha & Kansas City. On March 1, 1920, after 42 continuous years of service with the Burlington and its subsidiaries, Mr. Crosby was appointed assistant to the vice-president in charge of traffic, a position he held until his retirement from active service on March 15, 1926.

George H. Bremner, formerly a district engineer on valuation for the Interstate Commerce Commission and for 16 years treasurer of the American Railway Engineering Association, died on April 3, at his home at La Grange, Ill., after an illness of nearly three years. Mr. Bremner was born on December 17, 1861, at Marshalltown, Iowa, and graduated from the University of Iowa, in 1883, entering railway service in 1880 as a part time draftsman on the Chicago, Burlington & Quincy. Immediately after his graduation from college he served as a rodman on the construction of the Chicago, St. Paul & Kansas City (now the Chicago Great Western) and until May, 1884, he acted as a transitman on maintenance of way on the Chicago & North Western. For the next year and a half Mr. Bremner was a transitman on preliminary surveys and a draftsman on construction on the Burlington and in December,



G. H. Bremner

1885, he was promoted to division engineer of maintenance of way. From April, 1889, to June, 1890, he served as a transitman in charge of the location of the St. Louis, Keokuk & North Western (now a part of the Burlington) between Old Monroe, Mo., and St. Louis and he was then appointed assistant engineer of maintenance of way of the Burlington at Chicago. From June, 1902, to 1915, Mr. Bremner was engineer and engineer of maintenance of way of the Illinois district when he became assistant district engineer, Central district, division of valuation of the Interstate Commerce Commission. In 1916 he was promoted to district engineer, with headquarters at Chicago, in which position he remained until 1922 when he was appointed to the engineering staff of the Burlington, retiring from active service due to sickness in 1924. Mr. Bremner served continuously as treasurer of the American Railway Engineering Association from 1911 until 1927.